SEQUENCE LISTING

<110> Li, Li
Padigaru, Muralidhara
Vernet, Corine
Fernandes, Elma
Shimkets, Richard
Spaderna, Steven
Majumder, Kumud

<120> Novel Polypeptides and Nucleic Acids Encoding Same

<130> 15966-721 US

<140> 09/804,014
<141> 2001-03-12

<150> 60/188,316
<151> 2000-03-10

<150> 60/188,277
<151> 2000-03-10

<150> 60/189,139
<151> 2000-03-14

<150> 60/189,140
<151> 2000-03-14

<150> 60/190,401
<151> 2000-03-17

<150> 60/190,231
<151> 2000-03-17

<160> 75

<170> PatentIn Ver. 2.1

<210> 1
<211> 1949
<212> DNA
<213> Homo sapiens

<400> 1
gtgttgcctc ttgcaatgaa aaacagaaac acccaaggca aaatggtaat ggcctgtcca 60
ctgaaaagca gaagccccac atgagcaagc tgcaggcagc tggcaggcac cgattcctgc 120
tgtcctgttt tggatgctat ctaacatctt catgttcaac ccagagaaga aacatcccgc 180
cgttgccctg gggccctctc atcccacagc aggtttcgag ccttccccag ccctcgggat 240
ggacaaccct tgagaagcag aggtcaggga accctgaccc cgccaccctt gcccaggcca 300
tccgctgccc tcacaggcac agacagaagg cctctgtccg tggccagggc actccatggg 360
gaagaaacag gccctgttcc ctccctgctc accacttcac ccagctcagc tggcacaaaa 420
atactgccac cacaccttca ccctgcctag cccaacctgg cagggcctcg gagtagcctg 480
ccagctaaaa tacgggttgc ccagataact gtgaatgtca gataagaatc ttctgggacg 540
agtatgtccc atgccatatt tgggacatac ttacactaat aaatttctgt ttatctgaaa 600
ctcaaatttg cctgggcgtc ctgtactttt cttaactaaa tttggtgcct ctacacacaa 660
ggtccctggg gtgggggggc acaggagcaa gccccttccc aggctgggtc cctgccggca 720

```
tctcccacag gccaggactg gccacccaga tggagcccgt gccaggcagc cggcgacaga 780
cggacaaagg ctgctcagga gacactgcac accttcctct ttcttgtctg ggggctcaag 840
aatccagacg cccacctccc cgagcgagca ccaagacagg aagccaacct gcaatgccca 900
gcccactgcg accacagggc tctgccgggg tcctgccgga acccagggtt ccggtccaga 960
agccagggat aaatgccgct tctcctatag ggacagtcag agtagagagg gggaggccta 1020
cagtctcacc tgcagggaga ggaagtcctc ggggcgggca cgtgggggcc ctgacagctc 1080
cgagcacacc cggccacagt gaccacggac tgcacacgca gaagcagtct ggatcccacg 1140
cgtggctgtg ctgccagcag acagcaccca acctcccatg ctcctcatca caggaaaaga 1200
gaccagcagc atctctgcca ggcatggtgg ggcccctccg ccacagccta ggagtccagg 1260
ccacccaccc tcacagcact ggagtgcgtg ggtcagtgag gccctgggac gggcctgcgg 1320
gcacaggggg acagagggtt cggggagggc ggcgcagccc cacgaagggc tcctcccaag 1380
cctgtgtggg gcccagggga gctgcacctc cgggatggga caaggcaggg tcctggcttt 1440
catcagccac agcacagctg ccacagggca caaaaggacg gctgagagac gaggtcctca 1500
cccacaccat ggggaaaccg aggcatggga aggttggagg gggggcagcc aggctggcgc 1560
caagatcaca ggcaggcagg cctgaaggcc gagcaatgca gccactagga aggcatgagt 1620
tggggtcggg gtgtccccag ccctagagcc caaagctgcc accactcccc acccccaaca 1680
tgggtggggg cagggagagc tcttcttggg accaatccca aaaccatgcg cagtgggccc 1740
ggctggagcc caggcagcag gcatcctctc tgccagggtg agaaactggg ccctcatgtc 1800
aggctggaag gggggtctcc aggtggggag aaagaacagg aaggaaccag gcccctccct 1860
cgagggaccc cgcacccagg ctgctccctg agcgtggggt gggctcagcg caattgggtc 1920
cagacacctg tcccgggcag ccgtctcga                                   1949
```

<210> 2
<211> 298
<212> PRT
<213> Homo sapiens

<400> 2

```
Met Glu Pro Val Pro Gly Ser Arg Arg Gln Thr Asp Lys Gly Cys Ser
  1               5                  10                  15

Gly Asp Thr Ala His Leu Pro Leu Ser Cys Leu Gly Ala Gln Glu Ser
             20                  25                  30

Arg Arg Pro Pro Pro Arg Ala Ser Thr Lys Thr Gly Ser Gln Pro Ala
         35                  40                  45

Met Pro Ser Pro Leu Arg Pro Gln Gly Ser Ala Gly Val Leu Pro Glu
     50                  55                  60

Pro Arg Val Pro Val Gln Lys Pro Gly Ile Asn Ala Ala Ser Pro Ile
 65                  70                  75                  80

Gly Thr Val Arg Val Glu Arg Gly Arg Pro Thr Val Ser Pro Ala Gly
                 85                  90                  95

Arg Gly Ser Pro Arg Gly Gly His Val Gly Gly Leu Thr Ala Pro Ser
            100                 105                 110

Thr Pro Gly His Ser Asp His Gly Leu His Thr Gln Lys Gln Ser Gly
        115                 120                 125

Ser His Ala Trp Leu Cys Cys Gln Gln Thr Ala Pro Asn Leu Pro Cys
    130                 135                 140

Ser Ser Ser Gln Glu Lys Arg Pro Ala Ala Ser Leu Pro Gly Met Val
```

```
145                 150                 155                 160

Gly Pro Leu Arg His Ser Leu Gly Val Gln Ala Thr His Pro His Ser
                165                 170                 175

Thr Gly Val Arg Gly Ser Val Arg Pro Trp Asp Gly Pro Ala Gly Thr
            180                 185                 190

Gly Gly Gln Arg Val Arg Gly Gly Arg Arg Ser Pro Thr Lys Gly Ser
        195                 200                 205

Ser Gln Ala Cys Val Gly Pro Arg Gly Ala Ala Pro Pro Gly Trp Asp
    210                 215                 220

Lys Ala Gly Ser Trp Leu Ser Ser Ala Thr Ala Gln Leu Pro Gln Gly
225                 230                 235                 240

Thr Lys Gly Arg Leu Arg Asp Glu Val Leu Thr His Thr Met Gly Lys
                245                 250                 255

Pro Arg His Gly Lys Val Gly Gly Gly Ala Ala Arg Leu Ala Pro Arg
            260                 265                 270

Ser Gln Ala Gly Arg Pro Glu Gly Arg Ala Met Gln Pro Leu Gly Arg
        275                 280                 285

His Glu Leu Gly Ser Gly Cys Pro Gln Pro
    290                 295
```

<210> 3
<211> 2092
<212> DNA
<213> Homo sapiens

<400> 3

```
tgcccgggca ggtgggcgtg ttgcctcttg caatgaaaaa cagaaacacc caaggcaaaa 60
tggtaatggc ctgtccactg aaaagcagaa gccccacatg agcaagctgc aggcagctgg 120
caggcaccga ttcctgctgt cctgttttgg atgctatcta acatcttcat gttcaaccca 180
gagaagtttc atcccgccgt tgccctgggg ccctctcatc ccacagcagg tttcaagcct 240
tccccagccc tcgggatgga caacccttga gaagcagagg tcagggaacc ctgaccccgc 300
caccccttgcc caggccatcc gctgccctca caggcacaga cagaaggcct ctgtccgtgg 360
ccagggcact ccatggggaa gaaacaggcc ctgttccctc cctgctcacc acttcaccca 420
gctcagctgg cacaaaaata ctgccaccac accttcaccc tgcctagccc aacctggcag 480
ggcctcggag tagcctgcca gctaaaatac gggttgccca gataactgtg aatgtcagat 540
aagaatcttc tgggacgagt atgtcccatg ccatatttgg gacatactta cactaataaa 600
tttctgttta tctgaaactc aaatttgcct gggcgtcctg tacttttctt aactaaattt 660
ggtgcctcta cacacaaggt ccctggggtg ggggggcaca ggagcaagcc ccttcccagg 720
ctgggtccct gccggcatct cccacaggcc aggactggcc acccagatgg agcccgtgcc 780
aggcagccgg cgacagacgg acaaaggctg ctcaggagac actgcacacc ttcctctttc 840
ttgtctgggg gctcaagaat ccagacgccc acctccccga gcgagcacca agacaggaag 900
ccaacctgca atgcccagcc cactgcgacc acagggctct gccggggtcc tgccggaacc 960
cagggttccg gtccagaagc cagggataaa tgccgcttct cctataggga cagtcagagt 1020
agagaggggg aggcctacag tctcacctgc agggagagga agtcctcggg gcgggcacgt 1080
gggggcctg acagctccga gcacacccgg ccacagtgac cacggactgc acacgcagaa 1140
gcagtctgga tcccacgcgt ggctgtgctg ccagcagaca gcacccaacc tcccatgctc 1200
ctcatcacag gaaaagagac cagcagcatc tctgccaggc atggtggggc ccctccgcca 1260
```

```
cagcctagga gtccaggcca cccaccctca cagcactgga gtgcgtgggt cagtgaggcc 1320
ctgggacggg cctgcgggca caggggggaca gagggttcgg ggagggcggc gcagccccac 1380
gaagggctcc tcccaagcct gtgtggggcc caggggagct gcacctccgg gatgggacaa 1440
ggcagggtcc tggctttcat cagccacagc acagctgcca cagggcacaa aaggacggct 1500
gagagacgag gtcctcaccc acaccatggg gaaaccgagg catgggaagg ttggaggggg 1560
ggcagccagg ctggcgccaa gatcacaggc aggcaggcct gaaggccgag caatgtagcc 1620
actaggaagg catgagttgg ggtcggggtg tccccagccc tagagcccaa agctgccacc 1680
actccccacc cccaacatgg gtgggggcag ggagagctct tcttgggacc aatcccaaaa 1740
ccatgcgcag tgggcccggc tggagcccag gcagcaggca tcctctctgc cagggtgaga 1800
aactgggccc tcatgtcagg ctggaagggg ggtctccagg tggggagaaa gaacaggaag 1860
gaaccaggcc cctccctcga gggaccccgc acccaggctg ctccctgagc gtggggtggg 1920
ctcagcgcac ctgggtccac acagggacct ggcaaagctg tagaggctgt gggaggggct 1980
gccgctggat ggggtacagg cccgccgccc cttctgagag gacaggggag gcccagagct 2040
gctgatgcgg actgaccgcc catctcacag acgggatgta gagggctccc cc          2092
```

<210> 4
<211> 283
<212> PRT
<213> Homo sapiens

<400> 4

```
Met Glu Pro Val Pro Gly Ser Arg Arg Gln Thr Asp Lys Gly Cys Ser
  1               5                  10                  15

Gly Asp Thr Ala His Leu Pro Leu Ser Cys Leu Gly Ala Gln Glu Ser
             20                  25                  30

Arg Arg Pro Pro Pro Arg Ala Ser Thr Lys Thr Gly Ser Gln Pro Ala
         35                  40                  45

Met Pro Ser Pro Leu Arg Pro Gln Gly Ser Ala Gly Val Leu Pro Glu
     50                  55                  60

Pro Arg Val Pro Val Gln Lys Pro Gly Ile Asn Ala Ala Ser Pro Ile
 65                  70                  75                  80

Gly Thr Val Arg Val Glu Arg Gly Arg Pro Thr Val Ser Pro Ala Gly
                 85                  90                  95

Arg Gly Ser Pro Arg Gly Gly His Val Gly Gly Leu Thr Ala Pro Ser
            100                 105                 110

Thr Pro Gly His Ser Asp His Gly Leu His Thr Gln Lys Gln Ser Gly
        115                 120                 125

Ser His Ala Trp Leu Cys Cys Gln Gln Thr Ala Pro Asn Leu Pro Cys
    130                 135                 140

Ser Ser Ser Gln Glu Lys Arg Pro Ala Ala Ser Leu Pro Gly Met Val
145                 150                 155                 160

Gly Pro Leu Arg His Ser Leu Gly Val Gln Ala Thr His Pro His Ser
                165                 170                 175

Thr Gly Val Arg Gly Ser Val Arg Pro Trp Asp Gly Pro Ala Gly Thr
            180                 185                 190
```

```
Gly Gly Gln Arg Val Arg Gly Gly Arg Arg Ser Pro Thr Lys Gly Ser
        195                 200                 205

Ser Gln Ala Cys Val Gly Pro Arg Gly Ala Ala Pro Pro Gly Trp Asp
    210                 215                 220

Lys Ala Gly Ser Trp Leu Ser Ser Ala Thr Ala Gln Leu Pro Gln Gly
225                 230                 235                 240

Thr Lys Gly Arg Leu Arg Asp Glu Val Leu Thr His Thr Met Gly Lys
                245                 250                 255

Pro Arg His Gly Lys Val Gly Gly Gly Ala Ala Arg Leu Ala Pro Arg
            260                 265                 270

Ser Gln Ala Gly Arg Pro Glu Gly Arg Ala Met
        275                 280
```

<210> 5
<211> 1011
<212> DNA
<213> Homo sapiens

<400> 5
```
atctcccaca ggccaggact ggccacccag atggagcccg tgccaggcag ccggcgacag 60
acggacaaag gctgctcagg agacactgca caccttcctc tttcttgtct gggggctcaa 120
gaatccagac gcccacctcc ccgagcgagc accaagacag gaagccaacc tgcaatgccc 180
agcccactgc gaccacaggg ctctgccggg gtcctgccgg aacccagggt tccggtccag 240
aagccaggga taaatgccgc ttctcctata gggacagtca aggtagagag ggggaggcct 300
acagtctcac ctgcagggag aggaagtcct cggggcgggc acgtgggggg cctgacagct 360
ccgagcacac ccggccacag tgaccacgga ctgcacacgc agaagcagtc tggatcccac 420
gcgtggctgt gctgccagca gacagcaccc aacctcccat gctcctcatc acaggaaaag 480
agaccagcag catctctgcc aggcatggtg gggcccctcc gccacagcct aggagtccag 540
gccacccacc ctcacagcac tggagtgcgt gggtcagtga ggccctggga cgggcctgcg 600
ggcacagggg gacagagggt tcggggaggg cggcgcagcc ccacgaaggg ctcctcccaa 660
gcctgtgtgg ggcccagggg agctgcacct ccgggatggg acaaggcagg gtcctggctt 720
tcatcagcca cagcacagct gccacagggc acaaaaggac ggctgagaga cgaggtcctc 780
acccacacca tggggaaacc gaggcatggg aaggttggag gggggcagc caggctggcg 840
ccaagatcac aggcaggcag gcctgaaggc cgagcaatgc agccactagg aaggcatgag 900
ttggggtcgg ggtgtcccca gccctagagc ccaaagctgc caccactccc cacccccaac 960
atgggtgggg gcagggagag ctcttcttgg gaccaatccc aaaaccatgc g          1011
```

<210> 6
<211> 298
<212> PRT
<213> Homo sapiens

<400> 6
```
Met Glu Pro Val Pro Gly Ser Arg Arg Gln Thr Asp Lys Gly Cys Ser
  1               5                  10                  15

Gly Asp Thr Ala His Leu Pro Leu Ser Cys Leu Gly Ala Gln Glu Ser
             20                  25                  30
```

```
Arg Arg Pro Pro Pro Arg Ala Ser Thr Lys Thr Gly Ser Gln Pro Ala
         35                  40                  45

Met Pro Ser Pro Leu Arg Pro Gln Gly Ser Ala Gly Val Leu Pro Glu
     50                  55                  60

Pro Arg Val Pro Val Gln Lys Pro Gly Ile Asn Ala Ala Ser Pro Ile
 65                  70                  75                  80

Gly Thr Val Lys Val Glu Arg Gly Arg Pro Thr Val Ser Pro Ala Gly
                 85                  90                  95

Arg Gly Ser Pro Arg Gly Gly His Val Gly Gly Leu Thr Ala Pro Ser
            100                 105                 110

Thr Pro Gly His Ser Asp His Gly Leu His Thr Gln Lys Gln Ser Gly
        115                 120                 125

Ser His Ala Trp Leu Cys Cys Gln Gln Thr Ala Pro Asn Leu Pro Cys
    130                 135                 140

Ser Ser Ser Gln Glu Lys Arg Pro Ala Ala Ser Leu Pro Gly Met Val
145                 150                 155                 160

Gly Pro Leu Arg His Ser Leu Gly Val Gln Ala Thr His Pro His Ser
                165                 170                 175

Thr Gly Val Arg Gly Ser Val Arg Pro Trp Asp Gly Pro Ala Gly Thr
            180                 185                 190

Gly Gly Gln Arg Val Arg Gly Gly Arg Arg Ser Pro Thr Lys Gly Ser
        195                 200                 205

Ser Gln Ala Cys Val Gly Pro Arg Gly Ala Ala Pro Pro Gly Trp Asp
    210                 215                 220

Lys Ala Gly Ser Trp Leu Ser Ser Ala Thr Ala Gln Leu Pro Gln Gly
225                 230                 235                 240

Thr Lys Gly Arg Leu Arg Asp Glu Val Leu Thr His Thr Met Gly Lys
                245                 250                 255

Pro Arg His Gly Lys Val Gly Gly Gly Ala Ala Arg Leu Ala Pro Arg
            260                 265                 270

Ser Gln Ala Gly Arg Pro Glu Gly Arg Ala Met Gln Pro Leu Gly Arg
        275                 280                 285

His Glu Leu Gly Ser Gly Cys Pro Gln Pro
    290                 295
```

<210> 7
<211> 1747
<212> DNA
<213> Homo sapiens

<400> 7
gaagcctgat tctgacgaaa cacacgcaca cggaaacatg gagagacgca ggacaggatc 60
ccggcggcag aaggacggag agaaagggga ccccgggacg ggaaaggcgc agagcaggcg 120
cgggcggcgg cggcggcggg gcagggcagg gcgggcgtcc cggcagaggg cgcgcggtcg 180
ccctgtcgcc ctccgccccg ccggggtcac agtgcccccc ccctcgcgcc ctagccgccc 240
tgccgggcta ttttacgcgc ggacaccgga caccggacac cgggctgggg cggcggtcgg 300
ggccacacgt cggttcgcgg gtcgccgggg ctgcgcgcgc catggagccg cggtgcccgc 360
cgccccgtgc ggctgctgcg agcggctggt gctcaacgtg gccgggctgc gcttcgagac 420
gcgggcgcgc acgctgggcc gcttcccgga cactctgcta ggggacccag cgcgccgcgg 480
ccgcttctac gacgacgcgc gccgcgagta tttcttcgac cggcaccggc ccagcttcga 540
cgccgtgctc tactactacc agtccggtgg gcggctgcgg cggccggcgc acgtgccgct 600
cgacgtcttc ctggaagagg tggccttcta cgggctgggc gcggcggccc tggcacgcct 660
gcgcgaggac gagggctgcc cggtgccgcc cgagcgcccc ctgccccgcc gcgccttcgc 720
ccgccagctg tggctgcttt tcgagtttcc cgagagctct caggccgcgc gcgtgctcgc 780
cgtagtctcc gtgctggtca tcctcgtctc catcgtcgtc ttctgcctcg agacgctgcc 840
tgacttccgc gacgaccgcg acggcacggg gcttgctgct gcagccgcag ccggcccggt 900
gttccccgct ccgctgaatg gctccagcca aatgcctgga aatccacccc gcctgccctt 960
caatgacccg ttcttcgtgg tggagacgct gtgtatttgt tggttctcct ttgagctgct 1020
ggtacgcctc ctggtctgtc caagcaaggc tatcttcttc aagaacgtga tgaacctcat 1080
cgattttgtg gctatccttc cctactttgt ggcactgggc accgagctgg cccggcagcg 1140
aggggtgggc cagcaggcca tgtcactggc catcctgaga gtcatccgat tggtgcgtgt 1200
cttccgcatc ttcaagctgt cccggcactc aaagggcctg caaatcttgg gccagacgct 1260
tcgggcctcc atgcgtgagc tgggcctcct catctttttc ctcttcatcg gtgtggtcct 1320
cttttccagc gccgtctact ttgccgaagt tgaccgggtg gactcccatt tcactagcat 1380
ccctgagtcc ttctggtggg cggtagtcac catgactaca gttggctatg gagacatggc 1440
acccgtcact gtgggtggca agatagtggg ctctctgtgt gccattgcgg gcgtgctgac 1500
tatttccctg ccagtgcccg tcattgtctc caatttcagc tacttttatc accgggagac 1560
agagggcgaa gaggctggga tgttcagcca tgtggacatg cagccttgtg gcccactgga 1620
gggcaaggcc aatgggggc tggtggacgg ggaggtacct gagctaccac ctccactctg 1680
ggcacccccc agggaacacc tggtcaccga agtgtgagga acagttgagg tctgcaggac 1740
ctcacac 1747

<210> 8
<211> 559
<212> PRT
<213> Homo sapiens

<400> 8
Met Glu Arg Arg Arg Thr Gly Ser Arg Arg Gln Lys Asp Gly Glu Lys
1 5 10 15

Gly Asp Pro Gly Thr Gly Lys Ala Gln Ser Arg Arg Gly Arg Arg Arg
20 25 30

Arg Arg Gly Arg Ala Gly Arg Ala Ser Arg Gln Arg Ala Arg Gly Arg
35 40 45

Pro Val Ala Leu Arg Pro Ala Gly Val Thr Val Pro Pro Pro Ser Arg
50 55 60

Pro Ser Arg Pro Ala Gly Leu Phe Tyr Ala Arg Thr Pro Asp Thr Gly
65 70 75 80

His Arg Ala Gly Ala Ala Val Gly Ala Thr Arg Arg Phe Ala Gly Arg
85 90 95

```
Arg Gly Cys Ala Arg His Gly Ala Ala Val Pro Ala Ala Pro Cys Gly
            100                 105                 110

Cys Cys Glu Arg Leu Val Leu Asn Val Ala Gly Leu Arg Phe Glu Thr
        115                 120                 125

Arg Ala Arg Thr Leu Gly Arg Phe Pro Asp Thr Leu Leu Gly Asp Pro
    130                 135                 140

Ala Arg Arg Gly Arg Phe Tyr Asp Asp Ala Arg Arg Glu Tyr Phe Phe
145                 150                 155                 160

Asp Arg His Arg Pro Ser Phe Asp Ala Val Leu Tyr Tyr Tyr Gln Ser
                165                 170                 175

Gly Gly Arg Leu Arg Arg Pro Ala His Val Pro Leu Asp Val Phe Leu
            180                 185                 190

Glu Glu Val Ala Phe Tyr Gly Leu Gly Ala Ala Ala Leu Ala Arg Leu
        195                 200                 205

Arg Glu Asp Glu Gly Cys Pro Val Pro Pro Glu Arg Pro Leu Pro Arg
    210                 215                 220

Arg Ala Phe Ala Arg Gln Leu Trp Leu Leu Phe Glu Phe Pro Glu Ser
225                 230                 235                 240

Ser Gln Ala Ala Arg Val Leu Ala Val Val Ser Val Leu Val Ile Leu
                245                 250                 255

Val Ser Ile Val Val Phe Cys Leu Glu Thr Leu Pro Asp Phe Arg Asp
            260                 265                 270

Asp Arg Asp Gly Thr Gly Leu Ala Ala Ala Ala Ala Ala Gly Pro Val
        275                 280                 285

Phe Pro Ala Pro Leu Asn Gly Ser Ser Gln Met Pro Gly Asn Pro Pro
    290                 295                 300

Arg Leu Pro Phe Asn Asp Pro Phe Phe Val Val Glu Thr Leu Cys Ile
305                 310                 315                 320

Cys Trp Phe Ser Phe Glu Leu Leu Val Arg Leu Leu Val Cys Pro Ser
                325                 330                 335

Lys Ala Ile Phe Phe Lys Asn Val Met Asn Leu Ile Asp Phe Val Ala
            340                 345                 350

Ile Leu Pro Tyr Phe Val Ala Leu Gly Thr Glu Leu Ala Arg Gln Arg
        355                 360                 365

Gly Val Gly Gln Gln Ala Met Ser Leu Ala Ile Leu Arg Val Ile Arg
    370                 375                 380

Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly
385                 390                 395                 400
```

```
Leu Gln Ile Leu Gly Gln Thr Leu Arg Ala Ser Met Arg Glu Leu Gly
                405                 410                 415

Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Val Leu Phe Ser Ser Ala
            420                 425                 430

Val Tyr Phe Ala Glu Val Asp Arg Val Asp Ser His Phe Thr Ser Ile
        435                 440                 445

Pro Glu Ser Phe Trp Trp Ala Val Val Thr Met Thr Thr Val Gly Tyr
    450                 455                 460

Gly Asp Met Ala Pro Val Thr Val Gly Gly Lys Ile Val Gly Ser Leu
465                 470                 475                 480

Cys Ala Ile Ala Gly Val Leu Thr Ile Ser Leu Pro Val Pro Val Ile
                485                 490                 495

Val Ser Asn Phe Ser Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Glu
            500                 505                 510

Ala Gly Met Phe Ser His Val Asp Met Gln Pro Cys Gly Pro Leu Glu
        515                 520                 525

Gly Lys Ala Asn Gly Gly Leu Val Asp Gly Glu Val Pro Glu Leu Pro
    530                 535                 540

Pro Pro Leu Trp Ala Pro Pro Arg Glu His Leu Val Thr Glu Val
545                 550                 555
```

<210> 9
<211> 1080
<212> DNA
<213> Homo sapiens

<400> 9

```
gtttaaagat gaaatgagac atgacagtac aaatcacaaa ctagatgcaa agtttggatt 60
tgcttatgaa aaagataaaa ggaaaagacc tacagctctt agaaatgaac aaagagaatg 120
aagtattgaa aatcaagctg caagcctcca gagaagcagg agcagcagct ctgagaaacg 180
tggcccagag attatttgaa aactaccaaa cgcaatctga agaagtgaga aagaagcagg 240
agggcagtaa acaattactc caggttaaca agcttgaaaa agaacagaaa ttgaaacaac 300
atgttgaaaa tctgaatcaa gttgctgaaa aacttgaaga aaaacacagt caaattacag 360
aattggagaa ccttgtacag agaatggaaa aggaaaagag aacactacta gaaagaaaac 420
tgtctttgga aaacaagcta ctgcaactca aatccagtgc tacatatgga aaaagttgcc 480
aggatcttca gagggagatt tccattctcc aggagcagat ctctcatctg cagtttgtga 540
ttcactccca acatcagaac ctgcgcagtg tcatccagga gatggaagga ttaaaaaata 600
atttaaaaga acaagacaaa agaattgaaa atctcagaga aaaggttaac atacttgaag 660
cccagaataa agaactaaaa acccaggtag cactttcatc tgaaactcct aggacaaagg 720
tatctaaggc tgtctctaca agtgaattga agaccgaagg tgtttccccc tatttaatgt 780
tgattaggtt acggaaatga actggctgga tgaagatctg atttagaaag actgcgtgag 840
tcttatttat tctctgaaac acagcccaag tttcatgtta aaatggcaaa atgccattat 900
ttaaatggaa cttattacat accaatggct ttgcaagaag atgacatttc agaaaatcaa 960
acaaatctat atttaatgga tggactcttc aaaacttacc aaatagttga agaaaccagg 1020
tgccttctca tgatggaaga cagattctgc tttaaattaa aaaaaaaaaa atctgaaaaa 1080
```

<210> 10
<211> 251
<212> PRT
<213> Homo sapiens

<400> 10
Met Gln Ser Leu Asp Leu Leu Met Lys Lys Ile Lys Gly Lys Asp Leu
1 5 10 15

Gln Leu Leu Glu Met Asn Lys Glu Asn Glu Val Leu Lys Ile Lys Leu
20 25 30

Gln Ala Ser Arg Glu Ala Gly Ala Ala Ala Leu Arg Asn Val Ala Gln
35 40 45

Arg Leu Phe Glu Asn Tyr Gln Thr Gln Ser Glu Glu Val Arg Lys Lys
50 55 60

Gln Glu Gly Ser Lys Gln Leu Leu Gln Val Asn Lys Leu Glu Lys Glu
65 70 75 80

Gln Lys Leu Lys Gln His Val Glu Asn Leu Asn Gln Val Ala Glu Lys
85 90 95

Leu Glu Glu Lys His Ser Gln Ile Thr Glu Leu Glu Asn Leu Val Gln
100 105 110

Arg Met Glu Lys Glu Lys Arg Thr Leu Leu Glu Arg Lys Leu Ser Leu
115 120 125

Glu Asn Lys Leu Leu Gln Leu Lys Ser Ser Ala Thr Tyr Gly Lys Ser
130 135 140

Cys Gln Asp Leu Gln Arg Glu Ile Ser Ile Leu Gln Glu Gln Ile Ser
145 150 155 160

His Leu Gln Phe Val Ile His Ser Gln His Gln Asn Leu Arg Ser Val
165 170 175

Ile Gln Glu Met Glu Gly Leu Lys Asn Asn Leu Lys Glu Gln Asp Lys
180 185 190

Arg Ile Glu Asn Leu Arg Glu Lys Val Asn Ile Leu Glu Ala Gln Asn
195 200 205

Lys Glu Leu Lys Thr Gln Val Ala Leu Ser Ser Glu Thr Pro Arg Thr
210 215 220

Lys Val Ser Lys Ala Val Ser Thr Ser Glu Leu Lys Thr Glu Gly Val
225 230 235 240

Ser Pro Tyr Leu Met Leu Ile Arg Leu Arg Lys
245 250

<210> 11
<211> 1482

<212> DNA
<213> Homo sapiens

<400> 11
```
tttttcagat ttttttttt ttaatttaaa gcagaatctg tcttccatca tgagaaggca 60
cctggtttct tcaactattt ggtaagtttt gaagagtcca tccattaaat atagatttgt 120
ttgattttct gaaatgtcat cttcttgcaa agccattggt atgtaataag ttccatttaa 180
ataatggcat tttgccattt taacatgaaa cttgggctgt gtttcagaga ataaataaga 240
ctcacgcagt ctttctaaat cagatcttca tccagccagt tcatttccgt aacctaatca 300
acattaaata aggggaaaca ccttcggtct tcaattcact tgtagagaca gccttagata 360
cctttgtcct aggagtttca gatgaaagtg ctacctgggt ttttagttct ttattctggg 420
cttcaagtat gttaaccttt tctctgagat tttcaattct tttgtcttgt tcttttaaat 480
tatttttaa tccttccatc tcctggatga cactgcgcag gttctgatgt tgggagtgaa 540
tcacaaactg cagatgagag atctgctcct ggagaatgga aatctccctc tgaagatcct 600
ggcaactttt tccatatgta gcactggatt tgagttgcag tagcttgttt tccaaagaca 660
gttttctttc tagtagtgtt ctcttttcct tttccattct ctgtacaagg ttctccaatt 720
ctgtaatttg actgtgtttt tcttcaagtt tttcagcaac ttgattcaga ttttcaacat 780
gttgtttcaa tttctgttct ttttcaagct tgttaacctg gagtaattgt ttactgtcct 840
cctgcttctt tctcacttct tcagattgcg tttggtagtt ttcaaataat ctctgggcca 900
cgtttctcag agctgctgct cctgcttctc tggaggcttg cagcttgatt ttcaatactt 960
cattctcttt gttcatttct aagagctgta ggtcttttcc ttttatcttt ttcataagca 1020
aatccaaact gcaacaagaa ggatccattt cagaatcaga gccctgttga aggtttccac 1080
agtgctttgc atctagtttg tgatttgtac tgtcatgtct tatttcatct ttaaacatct 1140
gggtcctgat cttttgcaga gtagttcgaa tctttttcac atactcggtt tcttcaataa 1200
tgtgagcgga cgtagactca tacaaggcag aattatcttc catcttatcc cttgggggaa 1260
tttctgtggt cactgccact gttgtcattg tgaattctgg ccaagacgaa gtaaaattaa 1320
tagagctaaa acgccaacct tggtctttta gaagttcaga gatgtttcca tcatattaag 1380
actggcttcc ctcttcaaca aggacccttt tacaggaaat gtccttgatg ccaggaactc 1440
cactggggaa gccgctggaa aggcacctgg acacccacac ac                    1482
```

<210> 12
<211> 335
<212> PRT
<213> Homo sapiens

<400> 12
```
Met Thr Thr Val Ala Val Thr Thr Glu Ile Pro Pro Arg Asp Lys Met
  1               5                  10                  15

Glu Asp Asn Ser Ala Leu Tyr Glu Ser Thr Ser Ala His Ile Ile Glu
             20                  25                  30

Glu Thr Glu Tyr Val Lys Lys Ile Arg Thr Thr Leu Gln Lys Ile Arg
         35                  40                  45

Thr Gln Met Phe Lys Asp Glu Ile Arg His Asp Ser Thr Asn His Lys
     50                  55                  60

Leu Asp Ala Lys His Cys Gly Asn Leu Gln Gln Gly Ser Asp Ser Glu
 65                  70                  75                  80

Met Asp Pro Ser Cys Cys Ser Leu Asp Leu Leu Met Lys Lys Ile Lys
                 85                  90                  95

Gly Lys Asp Leu Gln Leu Leu Glu Met Asn Lys Glu Asn Glu Val Leu
            100                 105                 110
```

```
Lys Ile Lys Leu Gln Ala Ser Arg Glu Ala Gly Ala Ala Ala Leu Arg
        115                 120                 125

Asn Val Ala Gln Arg Leu Phe Glu Asn Tyr Gln Thr Gln Ser Glu Glu
    130                 135                 140

Val Arg Lys Lys Gln Glu Asp Ser Lys Gln Leu Leu Gln Val Asn Lys
145                 150                 155                 160

Leu Glu Lys Glu Gln Lys Leu Lys Gln His Val Glu Asn Leu Asn Gln
                165                 170                 175

Val Ala Glu Lys Leu Glu Glu Lys His Ser Gln Ile Thr Glu Leu Glu
            180                 185                 190

Asn Leu Val Gln Arg Met Glu Lys Glu Lys Arg Thr Leu Leu Glu Arg
        195                 200                 205

Lys Leu Ser Leu Glu Asn Lys Leu Leu Gln Leu Lys Ser Ser Ala Thr
    210                 215                 220

Tyr Gly Lys Ser Cys Gln Asp Leu Gln Arg Glu Ile Ser Ile Leu Gln
225                 230                 235                 240

Glu Gln Ile Ser His Leu Gln Phe Val Ile His Ser Gln His Gln Asn
                245                 250                 255

Leu Arg Ser Val Ile Gln Glu Met Glu Gly Leu Lys Asn Asn Leu Lys
            260                 265                 270

Glu Gln Asp Lys Arg Ile Glu Asn Leu Arg Glu Lys Val Asn Ile Leu
        275                 280                 285

Glu Ala Gln Asn Lys Glu Leu Lys Thr Gln Val Ala Leu Ser Ser Glu
    290                 295                 300

Thr Pro Arg Thr Lys Val Ser Lys Ala Val Ser Thr Ser Glu Leu Lys
305                 310                 315                 320

Thr Glu Gly Val Ser Pro Tyr Leu Met Leu Ile Arg Leu Arg Lys
                325                 330                 335
```

<210> 13
<211> 1442
<212> DNA
<213> Homo sapiens

<400> 13
gcccagggga ggagcagcac cgggaccccg cgtcggctgg gcgccccaca agggaagcca 60
gtcttaatat gatggaaaca tctctgaact tctaaaagac caaggttggc gttttagctc 120
tattaatttt acttcgtctt ggccagaatt cacaatgaca acagtgacag tgaccacaga 180
aattccccca agggataaga tggaagataa ttctgccttg tatgagtcta cgtccgctca 240
cattattgaa gaaaccgagt atgtgaaaaa gattcgaact actctgcaaa agatcaggac 300
ccagatgttt aaagatgaaa taagacatga cagtacaaat cacaaactag atgcaaagca 360
ctgtggaaac cttcaacagg gctctgattc tgaaatggat ccttcttgtt gcagtttgga 420

```
tttgcttatg aaaaagataa aaggaaaaga cctacagctc ttagaaatga acaaagagaa 480
tgaagtattg aaaatcaagc tgcaagcctc cagagaagca ggagcagcag ctctgagaaa 540
cgtggcccag agattatttg aaaactacca aacgcaatct gaagaagtga gaaagaagca 600
ggaggacagt aaacaattac tccaggttaa caagcttgaa aaagaacaga aattgaaaca 660
acatgttgaa aatctgaatc aagttgctga aaaacttgaa gaaaaacaca gtcaaattac 720
agaattggag aaccttgtac agagaatgga aaaggaaaag agaacactac tagaaagaaa 780
actgtctttg gaaaacaagc tactgcaact caaatccagt gctacatatg gaaaaagttg 840
ccaggatctt cagagggaga tttccattct ccaggagcag atctctcatc tgcagtttgt 900
gattcactcc caacatcaga acctgcgcag tgtcatccag gagatggaag gattaaaaaa 960
taatttaaaa gaacaagaca aaagaattga aaatctcaga gaaaaggtta acatacttga 1020
agcccagaat aaagaactaa aaacccaggt agcactttca tctgaaactc ctaggacaaa 1080
ggtatctaag gctgtctcta caagtgaatt gaagaccgaa ggtgtttccc cttatttaat 1140
gttgattagg ttacggaaat gaactggctg gatgaagatc tgatttagaa agactgcgtg 1200
agtcttattt attctctgaa acacagccca agtttcatgt taaaatggca aaatgccatt 1260
atttaaatgg aacttattac ataccaatgg ctttgcaaga agatgacatt tcagaaaatc 1320
aaacaaatct atatttaatg gatggactct tcaaaactta ccaaatagtt gaagaaacca 1380
ggtgccttct catgatggaa gacagattct gctttaaatt aaaaaaaaaa aaatctgaaa 1440
aa                                                                1442
```

<210> 14
<211> 335
<212> PRT
<213> Homo sapiens

<400> 14

```
Met Thr Thr Val Thr Val Thr Thr Glu Ile Pro Pro Arg Asp Lys Met
  1               5                  10                  15

Glu Asp Asn Ser Ala Leu Tyr Glu Ser Thr Ser Ala His Ile Ile Glu
             20                  25                  30

Glu Thr Glu Tyr Val Lys Lys Ile Arg Thr Thr Leu Gln Lys Ile Arg
         35                  40                  45

Thr Gln Met Phe Lys Asp Glu Ile Arg His Asp Ser Thr Asn His Lys
     50                  55                  60

Leu Asp Ala Lys His Cys Gly Asn Leu Gln Gln Gly Ser Asp Ser Glu
 65                  70                  75                  80

Met Asp Pro Ser Cys Cys Ser Leu Asp Leu Leu Met Lys Lys Ile Lys
                 85                  90                  95

Gly Lys Asp Leu Gln Leu Leu Glu Met Asn Lys Glu Asn Glu Val Leu
            100                 105                 110

Lys Ile Lys Leu Gln Ala Ser Arg Glu Ala Gly Ala Ala Ala Leu Arg
        115                 120                 125

Asn Val Ala Gln Arg Leu Phe Glu Asn Tyr Gln Thr Gln Ser Glu Glu
    130                 135                 140

Val Arg Lys Lys Gln Glu Asp Ser Lys Gln Leu Leu Gln Val Asn Lys
145                 150                 155                 160

Leu Glu Lys Glu Gln Lys Leu Lys Gln His Val Glu Asn Leu Asn Gln
```

```
                165                 170                 175

Val Ala Glu Lys Leu Glu Glu Lys His Ser Gln Ile Thr Glu Leu Glu
            180                 185                 190

Asn Leu Val Gln Arg Met Glu Lys Glu Lys Arg Thr Leu Leu Glu Arg
        195                 200                 205

Lys Leu Ser Leu Glu Asn Lys Leu Leu Gln Leu Lys Ser Ser Ala Thr
    210                 215                 220

Tyr Gly Lys Ser Cys Gln Asp Leu Gln Arg Glu Ile Ser Ile Leu Gln
225                 230                 235                 240

Glu Gln Ile Ser His Leu Gln Phe Val Ile His Ser Gln His Gln Asn
                245                 250                 255

Leu Arg Ser Val Ile Gln Glu Met Glu Gly Leu Lys Asn Asn Leu Lys
            260                 265                 270

Glu Gln Asp Lys Arg Ile Glu Asn Leu Arg Glu Lys Val Asn Ile Leu
        275                 280                 285

Glu Ala Gln Asn Lys Glu Leu Lys Thr Gln Val Ala Leu Ser Ser Glu
    290                 295                 300

Thr Pro Arg Thr Lys Val Ser Lys Ala Val Ser Thr Ser Glu Leu Lys
305                 310                 315                 320

Thr Glu Gly Val Ser Pro Tyr Leu Met Leu Ile Arg Leu Arg Lys
                325                 330                 335
```

<210> 15
<211> 1056
<212> DNA
<213> Homo sapiens

<400> 15

```
atgactttga ggcttttaga agactggtgc aggggatgg acatgaaccc tcggaaagcg 60
ctattgattg ccggcatctc ccagagctgc agtgtggcag aaatcgagga ggctctgcag 120
gctggtttag ctcccttggg ggagtacaga ctgcttggaa ggatgttcag gagggatgag 180
aacaggaaag tagccttagt agggcttact gcggagacta gtcacgccct ggtccctaag 240
gagataccgg gaaaaggggg tatctggaga gtgatcttta agccccctga cccagataat 300
acatttttaa gcagattaaa tgaattttta gcgggagagg gcatgacagt gggtgagttg 360
agcagagctc ttggacatga aaatggctcc ttagacccag agcagggcat gatcccggaa 420
atgtgggccc ctatgttggc acaggcatta gaggctcttc agcctgccct gcaatgcttg 480
aagtataaaa agctgagagt gttctcgggc agggagtctc cagaaccagg agaagaagaa 540
tttggacgct ggatgtttca tactactcag atgataaagg cgtggcaggt gccagatgta 600
gagaagagaa ggcgattgct agagagcctt cgaggcccag cacttgatgt tattcgtgtc 660
ctcaagataa acaatccttt aattactgtc gatgaatgtc tgcaggctct tgaggaggta 720
tttggggtta cagataatcc tagggagttg caggtcaaat atctaaccac ttaccagaag 780
gatgaggaaa agttgtcggc ttatgtacta aggctggagc ctttgttaca gaagctggta 840
cagagaggag caattgagag agatgctgtg aatcaggccc gcctagacca agtcattgct 900
ggggcagtcc acaaaacaat tcgcagagag cttaatctgc cagaggatgg cccagcccct 960
ggtttcttgc agttattggt actaataaag gattatgagg cagctgagga ggaggaggcc 1020
cttctccagg caatattgga aggtaatttc acctga                          1056
```

<210> 16
<211> 351
<212> PRT
<213> Homo sapiens

<400> 16
Met Thr Leu Arg Leu Leu Glu Asp Trp Cys Arg Gly Met Asp Met Asn
1 5 10 15

Pro Arg Lys Ala Leu Leu Ile Ala Gly Ile Ser Gln Ser Cys Ser Val
20 25 30

Ala Glu Ile Glu Glu Ala Leu Gln Ala Gly Leu Ala Pro Leu Gly Glu
35 40 45

Tyr Arg Leu Leu Gly Arg Met Phe Arg Arg Asp Glu Asn Arg Lys Val
50 55 60

Ala Leu Val Gly Leu Thr Ala Glu Thr Ser His Ala Leu Val Pro Lys
65 70 75 80

Glu Ile Pro Gly Lys Gly Gly Ile Trp Arg Val Ile Phe Lys Pro Pro
85 90 95

Asp Pro Asp Asn Thr Phe Leu Ser Arg Leu Asn Glu Phe Leu Ala Gly
100 105 110

Glu Gly Met Thr Val Gly Glu Leu Ser Arg Ala Leu Gly His Glu Asn
115 120 125

Gly Ser Leu Asp Pro Glu Gln Gly Met Ile Pro Glu Met Trp Ala Pro
130 135 140

Met Leu Ala Gln Ala Leu Glu Ala Leu Gln Pro Ala Leu Gln Cys Leu
145 150 155 160

Lys Tyr Lys Lys Leu Arg Val Phe Ser Gly Arg Glu Ser Pro Glu Pro
165 170 175

Gly Glu Glu Glu Phe Gly Arg Trp Met Phe His Thr Thr Gln Met Ile
180 185 190

Lys Ala Trp Gln Val Pro Asp Val Glu Lys Arg Arg Arg Leu Leu Glu
195 200 205

Ser Leu Arg Gly Pro Ala Leu Asp Val Ile Arg Val Leu Lys Ile Asn
210 215 220

Asn Pro Leu Ile Thr Val Asp Glu Cys Leu Gln Ala Leu Glu Glu Val
225 230 235 240

Phe Gly Val Thr Asp Asn Pro Arg Glu Leu Gln Val Lys Tyr Leu Thr
245 250 255

Thr Tyr Gln Lys Asp Glu Glu Lys Leu Ser Ala Tyr Val Leu Arg Leu

```
            260                 265                 270

Glu Pro Leu Leu Gln Lys Leu Val Gln Arg Gly Ala Ile Glu Arg Asp
        275                 280                 285

Ala Val Asn Gln Ala Arg Leu Asp Gln Val Ile Ala Gly Ala Val His
    290                 295                 300

Lys Thr Ile Arg Arg Glu Leu Asn Leu Pro Glu Asp Gly Pro Ala Pro
305                 310                 315                 320

Gly Phe Leu Gln Leu Leu Val Leu Ile Lys Asp Tyr Glu Ala Ala Glu
                325                 330                 335

Glu Glu Glu Ala Leu Leu Gln Ala Ile Leu Glu Gly Asn Phe Thr
            340                 345                 350
```

<210> 17
<211> 499
<212> DNA
<213> Homo sapiens

<400> 17
caaaatggtt aagaacacaa accagtacgc tgctcacgcc gatcccgctc cgctggttcc 60
gcacgctccg cacaccagcc tgcgcgcacc atgggccacc gttcagcagc tggaaggaag 120
atggcgcctg gcggacagca aaggctttga tgcatacatg aagaaactag gagtgggaat 180
atctttgcgc aatatgggcg caatggccaa accagactgt atcatcactt gtgatggcaa 240
aaacctcacc ataaaaactg agagcacttt gaaaacaaca cagttttctt gtaccctggg 300
agagaagttt gaaggaacca cagctgttgg cagaaaaact cagactgtct gcagctttac 360
agatggtgca ttggttccgc atcaggagtg ggatgggaag gaaaacacaa taacaagaaa 420
attgaaagat gcatcagtgg tggattgtgt cacgaacaat gtcacctgta ctcggatcta 480
tgaaaaagta gaataaaaa   499

<210> 18
<211> 163
<212> PRT
<213> Homo sapiens

<400> 18
```
Met Val Lys Asn Thr Asn Gln Tyr Ala Ala His Ala Asp Pro Ala Pro
  1               5                  10                  15

Leu Val Pro His Ala Pro His Thr Ser Leu Arg Ala Pro Trp Ala Thr
             20                  25                  30

Val Gln Gln Leu Glu Gly Arg Trp Arg Leu Ala Asp Ser Lys Gly Phe
         35                  40                  45

Asp Ala Tyr Met Lys Lys Leu Gly Val Gly Ile Ser Leu Arg Asn Met
     50                  55                  60

Gly Ala Met Ala Lys Pro Asp Cys Ile Ile Thr Cys Asp Gly Lys Asn
 65                  70                  75                  80

Leu Thr Ile Lys Thr Glu Ser Thr Leu Lys Thr Thr Gln Phe Ser Cys
```

```
                85                  90                  95

Thr Leu Gly Glu Lys Phe Glu Gly Thr Thr Ala Val Gly Arg Lys Thr
            100                 105                 110

Gln Thr Val Cys Ser Phe Thr Asp Gly Ala Leu Val Pro His Gln Glu
        115                 120                 125

Trp Asp Gly Lys Glu Asn Thr Ile Thr Arg Lys Leu Lys Asp Ala Ser
    130                 135                 140

Val Val Asp Cys Val Thr Asn Asn Val Thr Cys Thr Arg Ile Tyr Glu
145                 150                 155                 160

Lys Val Glu
```

<210> 19
<211> 413
<212> DNA
<213> Homo sapiens

<400> 19
gcaccatggc caccgttcag cagctggaag gaagatggcg cctggcggac agcaaaggct 60
ttgatgcata catgaagaaa ctaggagtgg gaatatcttt gcgcaatatg ggcgcaatgg 120
ccaaaccaga ctgtatcatc acttgtgatg gcaaaaacct caccataaaa actgagagca 180
ctttgaaaac aacacagttt tcttgtaccc tgggagagaa gtttgaagga accacagctg 240
ttggcagaaa aactcagact gtctgcagct ttacagatgg tgcattggtt ccgcatcagg 300
agtgggatgg gaaggaaaac acaataacaa gaaaattgaa agatgcatca gtggtggatt 360
gtgtcacgaa caatgtcacc tgtactcgga tctatgaaaa agtagaataa aaa 413

<210> 20
<211> 134
<212> PRT
<213> Homo sapiens

<400> 20
```
Met Ala Thr Val Gln Gln Leu Glu Gly Arg Trp Arg Leu Ala Asp Ser
  1               5                  10                  15

Lys Gly Phe Asp Ala Tyr Met Lys Lys Leu Gly Val Gly Ile Ser Leu
             20                  25                  30

Arg Asn Met Gly Ala Met Ala Lys Pro Asp Cys Ile Ile Thr Cys Asp
         35                  40                  45

Gly Lys Asn Leu Thr Ile Lys Thr Glu Ser Thr Leu Lys Thr Thr Gln
     50                  55                  60

Phe Ser Cys Thr Leu Gly Glu Lys Phe Glu Gly Thr Thr Ala Val Gly
 65                  70                  75                  80

Arg Lys Thr Gln Thr Val Cys Ser Phe Thr Asp Gly Ala Leu Val Pro
                85                  90                  95
```

```
His Gln Glu Trp Asp Gly Lys Glu Asn Thr Ile Thr Arg Lys Leu Lys
            100                 105                 110

Asp Ala Ser Val Val Asp Cys Val Thr Asn Asn Val Thr Cys Thr Arg
        115                 120                 125

Ile Tyr Glu Lys Val Glu
    130
```

<210> 21
<211> 468
<212> DNA
<213> Homo sapiens

<400> 21
gctgtagaca tggggatcgg atgctggaga aacccccctgc tgctgctgat tgccctggtc 60
ctgtcagcca agctgggtca cttccaaagg tgggagggct tccagcagaa gctcatgagc 120
aagaagaaca tgaattcaac actcaacttc ttcattcaat cctacaacaa tgccagcaac 180
gacacctact tatatcgagt ccagaggcta attcgaagtc agatgcagct gacgacggga 240
gtggagtata tagtcactgt gaagattggc tggaccaaat gcaagaggaa tgacacgagc 300
aattcttcct gccccctgca aaccaagaag ctgagaaaga gtttaatttg cgagtcttta 360
atatacacca tgccctggtt aaactatttc cagctctgga acaattcctg tctggagccc 420
gagcatgtgg gcagaaacct cagatgaggg ctcatatgat tgagttgt 468

<210> 22
<211> 145
<212> PRT
<213> Homo sapiens

<400> 22
```
Met Gly Ile Gly Cys Trp Arg Asn Pro Leu Leu Leu Leu Ile Ala Leu
  1               5                  10                  15

Val Leu Ser Ala Lys Leu Gly His Phe Gln Arg Trp Glu Gly Phe Gln
             20                  25                  30

Gln Lys Leu Met Ser Lys Lys Asn Met Asn Ser Thr Leu Asn Phe Phe
         35                  40                  45

Ile Gln Ser Tyr Asn Asn Ala Ser Asn Asp Thr Tyr Leu Tyr Arg Val
     50                  55                  60

Gln Arg Leu Ile Arg Ser Gln Met Gln Leu Thr Thr Gly Val Glu Tyr
 65                  70                  75                  80

Ile Val Thr Val Lys Ile Gly Trp Thr Lys Cys Lys Arg Asn Asp Thr
                 85                  90                  95

Ser Asn Ser Ser Cys Pro Leu Gln Thr Lys Lys Leu Arg Lys Ser Leu
            100                 105                 110

Ile Cys Glu Ser Leu Ile Tyr Thr Met Pro Trp Leu Asn Tyr Phe Gln
        115                 120                 125

Leu Trp Asn Asn Ser Cys Leu Glu Pro Glu His Val Gly Arg Asn Leu
```

130 135 140

Arg
145

<210> 23
<211> 278
<212> PRT
<213> Homo sapiens

<400> 23
Glu Pro Val Pro Gly Ser Arg Arg Gln Thr Asp Lys Gly Cys Ser Gly
1 5 10 15

Asp Thr Ala His Leu Pro Leu Ser Cys Leu Gly Ala Gln Glu Ser Arg
20 25 30

Arg Pro Pro Pro Arg Ala Ser Thr Lys Thr Gly Ser Gln Pro Ala Met
35 40 45

Pro Ser Pro Leu Arg Pro Gln Gly Ser Ala Gly Val Leu Pro Glu Pro
50 55 60

Arg Val Pro Val Gln Lys Pro Gly Ile Asn Ala Ala Ser Pro Ile Gly
65 70 75 80

Thr Val Lys Val Glu Arg Gly Arg Pro Thr Val Ser Pro Ala Gly Arg
85 90 95

Gly Ser Pro Arg Gly Gly His Val Gly Gly Leu Thr Ala Pro Ser Thr
100 105 110

Pro Gly His Ser Asp His Gly Leu His Thr Gln Lys Gln Ser Gly Ser
115 120 125

His Ala Trp Leu Cys Cys Gln Gln Thr Ala Pro Asn Leu Pro Cys Ser
130 135 140

Ser Ser Gln Glu Lys Arg Pro Ala Ala Ser Leu Pro Gly Met Val Gly
145 150 155 160

Pro Leu Arg His Ser Leu Gly Val Gln Ala Thr His Pro His Ser Thr
165 170 175

Gly Val Arg Gly Ser Val Arg Pro Trp Asp Gly Pro Ala Gly Thr Gly
180 185 190

Gly Gln Arg Val Arg Gly Gly Arg Arg Ser Pro Thr Lys Gly Ser Ser
195 200 205

Gln Ala Cys Val Gly Pro Arg Gly Ala Ala Pro Pro Gly Trp Asp Lys
210 215 220

Ala Gly Ser Trp Leu Ser Ser Ala Thr Ala Gln Leu Pro Gln Gly Thr
225 230 235 240

```
Lys Gly Arg Leu Arg Asp Glu Val Leu Thr His Thr Met Gly Lys Pro
                245                 250                 255

Arg His Gly Lys Val Gly Gly Gly Ala Ala Arg Leu Ala Pro Arg Ser
            260                 265                 270

Gln Ala Gly Arg Pro Glu
        275
```

<210> 24
<211> 284
<212> PRT
<213> Strongylocentrotus purpuratus

<400> 24

```
Glu Pro Gly Pro Gly Gly Ala Pro Gly Gln Arg Gly Asp Pro Gly Asp
  1               5                  10                  15

Leu Gly Pro Gln Gly Ser Pro Gly Ser Pro Gly Phe Ala Gly Pro Pro
             20                  25                  30

Gly Arg Ser Gly Asn Pro Gly Pro Gln Gly Glu Leu Gly Pro Thr Gly
         35                  40                  45

Ala Arg Gly Glu Thr Gly Gly Pro Gly Pro Ser Gly Pro Thr Gly Asp
     50                  55                  60

Pro Gly Pro Gln Gly Pro Leu Gly Ala Pro Gly Gln Gln Gly Glu Arg
 65                  70                  75                  80

Gly Glu Thr Gly Pro Gln Gly Gln Gly Gly Pro Pro Gly Pro Ile Gly
                 85                  90                  95

Ser Leu Gly Ala Pro Gly Ala Gln Gly Pro Pro Gly Pro Thr Gly Pro
            100                 105                 110

Ser Gly Asn Ala Gly Ser Pro Gly Gln Pro Gly Ala Arg Gly Glu Pro
        115                 120                 125

Gly Gln Ser Gly Ser Pro Gly Gln Pro Gly Leu Ala Gly Arg Thr Gly
    130                 135                 140

Pro Ser Gly Glu Arg Gly Asp Lys Gly Asn Asp Gly Gln Ser Gly Pro
145                 150                 155                 160

Pro Gly Pro Pro Gly Pro Ala Gly Pro Ala Gly Gln Ser Gly Ile Leu
                165                 170                 175

Gly Leu Ala Gly Gly Ser Gly Pro Arg Gly Pro Gly Gly Pro Ala Gly
            180                 185                 190

Pro Pro Gly Ala Ala Gly Ser Arg Gly Pro Ala Gly Lys Ser Gly Asp
        195                 200                 205

Arg Gly Ser Pro Gly Ala Val Gly Pro Ala Gly Asn Pro Gly Pro Ala
    210                 215                 220
```

```
Gly Glu Asn Gly Met Pro Gly Ser Asp Gly Asn Asp Gly Ala Pro Gly
225                 230                 235                 240

Pro Gln Gly Ser Arg Gly Glu Lys Gly Asp Thr Gly Ala Ser Gly Ala
                245                 250                 255

Asn Gly Ser Pro Gly Ala Pro Gly Pro Ile Gly Ala Pro Gly Ala Ala
            260                 265                 270

Gly Ala Ser Gly Pro Arg Gly Glu Thr Gly Ser Thr
        275                 280
```

<210> 25
<211> 420
<212> DNA
<213> Homo sapiens

<400> 25
gttccccgct ccgctgaatg gctccagcca aatgcctgga aatccacccc gcctgccctt 60
caatgacccg ttcttcgtgg tggagacgct gtgtatttgt tggttctcct ttgagctgct 120
ggtacgcctc ctggtctgtc caagcaaggc tatcttcttc aagaacgtga tgaacctcat 180
cgattttgtg gctatccttc cctactttgt ggcactgggc accgagctgg cccggcagcg 240
aggggtgggc cagcaggcca tgtcactggc catcctgaga gtcatccgat tggtgcgtgt 300
cttccgcatc ttcaagctgt cccggcactc aaagggcctg caaatcttgg gccagacgct 360
tcgggcctcc atgcgtgagc tgggcctcct catcttttc ctcttcatcg gtgtggtcct 420

<210> 26
<211> 420
<212> DNA
<213> Homo sapiens

<400> 26
gttccccgct ccgctgaatg gctccagcca aatgcctgga aatccacccc gcctgccctt 60
caatgacccg ttcttcgtgg tggagacgct gtgtatttgt tggttctcct ttgagctgct 120
ggtacgcctc ctggtctgtc caagcaaggc tatcttcttc aagaacgtga tgaacctcat 180
cgattttgtg gctatccttc cctactttgt ggcactgggc accgagctgg cccggcagcg 240
aggggtgggc cagcaggcca tgtcactggc catcctgaga gtcatccgat tggtgcgtgt 300
cttccgcatc ttcaagctgt cccggcactc aaagggcctg caaatcttgg gccagacgct 360
tcgggcctcc atgcgtgagc tgggcctcct catcttttc ctcttcatcg gtgtggtcct 420

<210> 27
<211> 539
<212> PRT
<213> Homo sapiens

<400> 27
```
Thr Gly Lys Ala Gln Ser Arg Arg Gly Arg Arg Arg Arg Arg Gly Arg
  1               5                  10                  15

Ala Gly Arg Ala Ser Arg Gln Arg Ala Arg Gly Arg Pro Val Ala Leu
             20                  25                  30

Arg Pro Ala Gly Val Thr Val Pro Pro Pro Ser Arg Pro Ser Arg Pro
```

```
         35                  40                  45

Ala Gly Leu Phe Tyr Ala Arg Thr Pro Asp Thr Gly His Arg Ala Gly
     50                  55                  60

Ala Ala Val Gly Ala Thr Arg Arg Phe Ala Gly Arg Arg Gly Cys Ala
 65                  70                  75                  80

Arg His Gly Ala Ala Val Pro Ala Ala Pro Cys Gly Cys Cys Glu Arg
                 85                  90                  95

Leu Val Leu Asn Val Ala Gly Leu Arg Phe Glu Thr Arg Ala Arg Thr
            100                 105                 110

Leu Gly Arg Phe Pro Asp Thr Leu Leu Gly Asp Pro Ala Arg Arg Gly
        115                 120                 125

Arg Phe Tyr Asp Asp Ala Arg Arg Glu Tyr Phe Phe Asp Arg His Arg
    130                 135                 140

Pro Ser Phe Asp Ala Val Leu Tyr Tyr Tyr Gln Ser Gly Gly Arg Leu
145                 150                 155                 160

Arg Arg Pro Ala His Val Pro Leu Asp Val Phe Leu Glu Glu Val Ala
                165                 170                 175

Phe Tyr Gly Leu Gly Ala Ala Ala Leu Ala Arg Leu Arg Glu Asp Glu
            180                 185                 190

Gly Cys Pro Val Pro Pro Glu Arg Pro Leu Pro Arg Arg Ala Phe Ala
        195                 200                 205

Arg Gln Leu Trp Leu Leu Phe Glu Phe Pro Glu Ser Ser Gln Ala Ala
    210                 215                 220

Arg Val Leu Ala Val Val Ser Val Leu Val Ile Leu Val Ser Ile Val
225                 230                 235                 240

Val Phe Cys Leu Glu Thr Leu Pro Asp Phe Arg Asp Asp Arg Asp Gly
                245                 250                 255

Thr Gly Leu Ala Ala Ala Ala Ala Ala Gly Pro Val Phe Pro Ala Pro
            260                 265                 270

Leu Asn Gly Ser Ser Gln Met Pro Gly Asn Pro Pro Arg Leu Pro Phe
        275                 280                 285

Asn Asp Pro Phe Phe Val Val Glu Thr Leu Cys Ile Cys Trp Phe Ser
    290                 295                 300

Phe Glu Leu Leu Val Arg Leu Leu Val Cys Pro Ser Lys Ala Ile Phe
305                 310                 315                 320

Phe Lys Asn Val Met Asn Leu Ile Asp Phe Val Ala Ile Leu Pro Tyr
                325                 330                 335

Phe Val Ala Leu Gly Thr Glu Leu Ala Arg Gln Arg Gly Val Gly Gln
```

```
            340                 345                 350

Gln Ala Met Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val
        355                 360                 365

Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu
    370                 375                 380

Gly Gln Thr Leu Arg Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe
385                 390                 395                 400

Phe Leu Phe Ile Gly Val Val Leu Phe Ser Ser Ala Val Tyr Phe Ala
                405                 410                 415

Glu Val Asp Arg Val Asp Ser His Phe Thr Ser Ile Pro Glu Ser Phe
            420                 425                 430

Trp Trp Ala Val Val Thr Met Thr Thr Val Gly Tyr Gly Asp Met Ala
        435                 440                 445

Pro Val Thr Val Gly Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala
    450                 455                 460

Gly Val Leu Thr Ile Ser Leu Pro Val Pro Val Ile Val Ser Asn Phe
465                 470                 475                 480

Ser Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Glu Ala Gly Met Phe
                485                 490                 495

Ser His Val Asp Met Gln Pro Cys Gly Pro Leu Glu Gly Lys Ala Asn
            500                 505                 510

Gly Gly Leu Val Asp Gly Glu Val Pro Glu Leu Pro Pro Pro Leu Trp
        515                 520                 525

Ala Pro Pro Arg Glu His Leu Val Thr Glu Val
    530                 535


<210> 28
<211> 530
<212> PRT
<213> Mus musculus

<400> 28
Thr Arg Lys Ala Gln Glu Ile His Gly Lys Ala Pro Gly Gly Ser Val
  1               5                  10                  15

Ser Thr Gly Val Gly Thr Ala Glu Gly Ala Pro Ser Pro Ala Gly Val
             20                  25                  30

Thr Pro Pro Pro Pro Pro Arg Pro Gly Arg Thr Phe His Ala Ile Phe
         35                  40                  45

Thr Arg Arg His Arg Thr Pro Asp Trp Gly Gly Cys Gly Val Gly Ala
     50                  55                  60
```

```
Thr Arg Pro Phe Thr Gly Arg Pro Gly Cys Ala Arg His Gly Ala Thr
 65                  70                  75                  80

Val Pro Ala Ala Leu Arg Cys Cys Glu Arg Leu Val Leu Asn Val Ala
                 85                  90                  95

Gly Leu Arg Phe Glu Thr Arg Ala Arg Thr Leu Gly Arg Phe Pro Asp
            100                 105                 110

Thr Leu Leu Gly Asp Pro Val Arg Arg Ser Arg Phe Tyr Asp Gly Ala
        115                 120                 125

Arg Ala Glu Tyr Phe Phe Asp Arg His Arg Pro Ser Phe Asp Ala Val
    130                 135                 140

Leu Tyr Tyr Tyr Gln Ser Gly Gly Arg Leu Arg Arg Pro Ala His Val
145                 150                 155                 160

Pro Leu Asp Val Phe Leu Glu Glu Val Ser Phe Tyr Gly Leu Gly Arg
                165                 170                 175

Arg Leu Ala Arg Leu Arg Glu Asp Glu Gly Cys Ala Val Ala Glu Arg
            180                 185                 190

Pro Leu Pro Pro Pro Phe Ala Arg Gln Leu Trp Leu Leu Phe Glu Phe
        195                 200                 205

Pro Glu Ser Ser Gln Ala Ala Arg Val Leu Ala Val Val Ser Val Leu
    210                 215                 220

Val Ile Leu Val Ser Ile Val Val Phe Cys Leu Glu Thr Leu Pro Asp
225                 230                 235                 240

Phe Arg Asp Asp Arg Asp Asp Pro Gly Leu Ala Pro Val Ala Ala Ala
                245                 250                 255

Thr Gly Ser Phe Leu Ala Arg Leu Asn Gly Ser Ser Pro Met Pro Gly
            260                 265                 270

Ala Pro Pro Arg Gln Pro Phe Asn Asp Pro Phe Phe Val Val Glu Thr
        275                 280                 285

Leu Cys Ile Cys Trp Phe Ser Phe Glu Leu Leu Val His Leu Val Ala
    290                 295                 300

Cys Pro Ser Lys Ala Val Phe Phe Lys Asn Val Met Asn Leu Ile Asp
305                 310                 315                 320

Phe Val Ala Ile Leu Pro Tyr Phe Val Ala Leu Gly Thr Glu Leu Ala
                325                 330                 335

Arg Gln Arg Gly Val Gly Gln Pro Ala Met Ser Leu Ala Ile Leu Arg
            340                 345                 350

Val Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His
        355                 360                 365
```

```
Ser Lys Gly Leu Gln Ile Leu Gly Gln Thr Leu Arg Ala Ser Met Arg
    370                 375                 380

Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Val Leu Phe
385                 390                 395                 400

Ser Ser Ala Val Tyr Phe Ala Glu Val Asp Arg Val Asp Thr His Phe
                405                 410                 415

Thr Ser Ile Pro Glu Ser Phe Trp Trp Ala Val Val Thr Met Thr Thr
            420                 425                 430

Val Gly Tyr Gly Asp Met Ala Pro Val Thr Val Gly Gly Lys Ile Val
        435                 440                 445

Gly Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile Ser Leu Pro Val
    450                 455                 460

Pro Val Ile Val Ser Asn Phe Ser Tyr Phe Tyr His Arg Glu Thr Glu
465                 470                 475                 480

Gly Glu Glu Ala Gly Met Tyr Ser His Val Asp Thr Gln Pro Cys Gly
                485                 490                 495

Thr Leu Glu Gly Lys Ala Asn Gly Gly Leu Val Asp Ser Glu Val Pro
            500                 505                 510

Glu Leu Leu Pro Pro Leu Trp Pro Pro Ala Gly Lys His Met Val Thr
        515                 520                 525

Glu Val
    530
```

<210> 29
<211> 425
<212> PRT
<213> Homo sapiens

<400> 29

```
Gly Arg Arg Gly Cys Ala Arg His Gly Ala Ala Val Pro Ala Ala Pro
  1               5                  10                  15

Cys Gly Cys Cys Glu Arg Leu Val Leu Asn Val Ala Gly Leu Arg Phe
             20                  25                  30

Glu Thr Arg Ala Arg Thr Leu Gly Arg Phe Pro Asp Thr Leu Leu Gly
         35                  40                  45

Asp Pro Ala Arg Arg Gly Arg Phe Tyr Asp Asp Ala Arg Arg Glu Tyr
     50                  55                  60

Phe Phe Asp Arg His Arg Pro Ser Phe Asp Ala Val Leu Tyr Tyr Tyr
 65                  70                  75                  80

Gln Ser Gly Gly Arg Leu Arg Arg Pro Ala His Val Pro Leu Asp Val
                 85                  90                  95
```

```
Phe Leu Glu Glu Val Ala Phe Tyr Gly Leu Gly Ala Ala Ala Leu Ala
            100                 105                 110

Arg Leu Arg Glu Asp Glu Gly Cys Pro Val Pro Pro Glu Arg Pro Leu
        115                 120                 125

Pro Arg Arg Ala Phe Ala Arg Gln Leu Trp Leu Leu Phe Glu Phe Pro
    130                 135                 140

Glu Ser Ser Gln Ala Ala Arg Val Leu Ala Val Val Ser Val Leu Val
145                 150                 155                 160

Ile Leu Val Ser Ile Val Val Phe Cys Leu Glu Thr Leu Pro Asp Phe
                165                 170                 175

Arg Asp Asp Arg Asp Gly Thr Gly Leu Ala Ala Ala Ala Ala Ala Gly
            180                 185                 190

Pro Val Phe Pro Ala Pro Leu Asn Gly Ser Ser Gln Met Pro Gly Asn
        195                 200                 205

Pro Pro Arg Leu Pro Phe Asn Asp Pro Phe Phe Val Val Glu Thr Leu
    210                 215                 220

Cys Ile Cys Trp Phe Ser Phe Glu Leu Leu Val Arg Leu Leu Val Cys
225                 230                 235                 240

Pro Ser Lys Ala Ile Phe Phe Lys Asn Val Met Asn Leu Ile Asp Phe
                245                 250                 255

Val Ala Ile Leu Pro Tyr Phe Val Ala Leu Gly Thr Glu Leu Ala Arg
            260                 265                 270

Gln Arg Gly Val Gly Gln Gln Ala Met Ser Leu Ala Ile Leu Arg Val
        275                 280                 285

Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser
    290                 295                 300

Lys Gly Leu Gln Ile Leu Gly Gln Thr Leu Arg Ala Ser Met Arg Glu
305                 310                 315                 320

Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Val Leu Phe Ser
                325                 330                 335

Ser Ala Val Tyr Phe Ala Glu Val Asp Arg Val Asp Ser His Phe Thr
            340                 345                 350

Ser Ile Pro Glu Ser Phe Trp Trp Ala Val Val Thr Met Thr Thr Val
        355                 360                 365

Gly Tyr Gly Asp Met Ala Pro Val Thr Val Gly Gly Lys Ile Val Gly
    370                 375                 380

Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile Ser Leu Pro Val Pro
385                 390                 395                 400
```

```
Val Ile Val Ser Asn Phe Ser Tyr Phe Tyr His Arg Glu Thr Glu Gly
                405                 410                 415

Glu Glu Ala Gly Met Phe Ser His Val
            420                 425


<210> 30
<211> 424
<212> PRT
<213> Homo sapiens

<400> 30
Gly Gly Gly Gly Cys Asp Arg Tyr Glu Pro Leu Pro Pro Ser Leu Pro
  1               5                  10                  15

Ala Ala Gly Glu Gln Asp Cys Cys Gly Glu Arg Val Val Ile Asn Ile
             20                  25                  30

Ser Gly Leu Arg Phe Glu Thr Gln Leu Lys Thr Leu Cys Gln Phe Pro
         35                  40                  45

Glu Thr Leu Leu Gly Asp Pro Lys Arg Arg Met Arg Tyr Phe Asp Pro
     50                  55                  60

Leu Arg Asn Glu Tyr Phe Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala
 65                  70                  75                  80

Ile Leu Tyr Tyr Tyr Gln Ser Gly Gly Arg Ile Arg Arg Pro Val Asn
                 85                  90                  95

Val Pro Ile Asp Ile Phe Ser Glu Glu Ile Arg Phe Tyr Gln Leu Gly
            100                 105                 110

Glu Glu Ala Met Glu Lys Phe Arg Glu Asp Glu Gly Phe Leu Arg Glu
        115                 120                 125

Glu Glu Arg Pro Leu Pro Arg Arg Asp Phe Gln Arg Gln Val Trp Leu
    130                 135                 140

Leu Phe Glu Tyr Pro Glu Ser Ser Gly Pro Ala Arg Gly Ile Ala Ile
145                 150                 155                 160

Val Ser Val Leu Val Ile Leu Ile Ser Ile Val Ile Phe Cys Leu Glu
                165                 170                 175

Thr Leu Pro Glu Phe Arg Asp Glu Lys Asp Tyr Pro Ala Ser Thr Ser
            180                 185                 190

Gln Asp Ser Phe Glu Ala Ala Gly Asn Ser Thr Ser Gly Ser Arg Ala
        195                 200                 205

Gly Ala Ser Ser Phe Ser Asp Pro Phe Phe Val Val Glu Thr Leu Cys
    210                 215                 220

Ile Ile Trp Phe Ser Phe Glu Leu Leu Val Arg Phe Phe Ala Cys Pro
```

```
225                 230                 235                 240

Ser Lys Ala Thr Phe Ser Arg Asn Ile Met Asn Leu Ile Asp Ile Val
                245                 250                 255

Ala Ile Ile Pro Tyr Phe Ile Thr Leu Gly Thr Glu Leu Ala Glu Arg
            260                 265                 270

Gln Gly Asn Gly Gln Gln Ala Met Ser Leu Ala Ile Leu Arg Val Ile
        275                 280                 285

Arg Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys
    290                 295                 300

Gly Leu Gln Ile Leu Gly Gln Thr Leu Lys Ala Ser Met Arg Glu Leu
305                 310                 315                 320

Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Ile Leu Phe Ser Ser
                325                 330                 335

Ala Val Tyr Phe Ala Glu Ala Asp Asp Pro Thr Ser Gly Phe Ser Ser
            340                 345                 350

Ile Pro Asp Ala Phe Trp Trp Ala Val Val Thr Met Thr Thr Val Gly
        355                 360                 365

Tyr Gly Asp Met His Pro Val Thr Ile Gly Gly Lys Ile Val Gly Ser
    370                 375                 380

Leu Cys Ala Ile Ala Gly Val Leu Thr Ile Ala Leu Pro Val Pro Val
385                 390                 395                 400

Ile Val Ser Asn Phe Asn Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu
                405                 410                 415

Glu Gln Ser Gln Tyr Met His Val
            420


<210> 31
<211> 532
<212> PRT
<213> Mus musculus

<400> 31
Met Thr Thr Arg Lys Ala Gln Glu Ile His Gly Lys Ala Pro Gly Gly
  1               5                  10                  15

Ser Val Ser Thr Gly Val Gly Thr Ala Glu Gly Ala Pro Ser Pro Ala
             20                  25                  30

Gly Val Thr Pro Pro Pro Pro Pro Arg Pro Gly Arg Thr Phe His Ala
         35                  40                  45

Ile Phe Thr Arg Arg His Arg Thr Pro Asp Trp Gly Gly Cys Gly Val
     50                  55                  60
```

```
Gly Ala Thr Arg Pro Phe Thr Gly Arg Pro Gly Cys Ala Arg His Gly
 65                  70                  75                  80

Ala Thr Val Pro Ala Ala Leu Arg Cys Cys Glu Arg Leu Val Leu Asn
                85                  90                  95

Val Ala Gly Leu Arg Phe Glu Thr Arg Ala Arg Thr Leu Gly Arg Phe
            100                 105                 110

Pro Asp Thr Leu Leu Gly Asp Pro Val Arg Arg Ser Arg Phe Tyr Asp
        115                 120                 125

Gly Ala Arg Ala Glu Tyr Phe Phe Asp Arg His Arg Pro Ser Phe Asp
    130                 135                 140

Ala Val Leu Tyr Tyr Tyr Gln Ser Gly Gly Arg Leu Arg Arg Pro Ala
145                 150                 155                 160

His Val Pro Leu Asp Val Phe Leu Glu Glu Val Ser Phe Tyr Gly Leu
                165                 170                 175

Gly Arg Arg Leu Ala Arg Leu Arg Glu Asp Glu Gly Cys Ala Val Ala
            180                 185                 190

Glu Arg Pro Leu Pro Pro Pro Phe Ala Arg Gln Leu Trp Leu Leu Phe
        195                 200                 205

Glu Phe Pro Glu Ser Ser Gln Ala Ala Arg Val Leu Ala Val Val Ser
    210                 215                 220

Val Leu Val Ile Leu Val Ser Ile Val Val Phe Cys Leu Glu Thr Leu
225                 230                 235                 240

Pro Asp Phe Arg Asp Asp Arg Asp Asp Pro Gly Leu Ala Pro Val Ala
                245                 250                 255

Ala Ala Thr Gly Ser Phe Leu Ala Arg Leu Asn Gly Ser Ser Pro Met
            260                 265                 270

Pro Gly Ala Pro Pro Arg Gln Pro Phe Asn Asp Pro Phe Phe Val Val
        275                 280                 285

Glu Thr Leu Cys Ile Cys Trp Phe Ser Phe Glu Leu Leu Val His Leu
    290                 295                 300

Val Ala Cys Pro Ser Lys Ala Val Phe Phe Lys Asn Val Met Asn Leu
305                 310                 315                 320

Ile Asp Phe Val Ala Ile Leu Pro Tyr Phe Val Ala Leu Gly Thr Glu
                325                 330                 335

Leu Ala Arg Gln Arg Gly Val Gly Gln Pro Ala Met Ser Leu Ala Ile
            340                 345                 350

Leu Arg Val Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser
        355                 360                 365
```

```
Arg His Ser Lys Gly Leu Gln Ile Leu Gly Gln Thr Leu Arg Ala Ser
    370                 375                 380

Met Arg Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Val
385                 390                 395                 400

Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu Val Asp Arg Val Asp Thr
                405                 410                 415

His Phe Thr Ser Ile Pro Glu Ser Phe Trp Trp Ala Val Val Thr Met
            420                 425                 430

Thr Thr Val Gly Tyr Gly Asp Met Ala Pro Val Thr Val Gly Gly Lys
        435                 440                 445

Ile Val Gly Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile Ser Leu
    450                 455                 460

Pro Val Pro Val Ile Val Ser Asn Phe Ser Tyr Phe Tyr His Arg Glu
465                 470                 475                 480

Thr Glu Gly Glu Glu Ala Gly Met Tyr Ser His Val Asp Thr Gln Pro
                485                 490                 495

Cys Gly Thr Leu Glu Gly Lys Ala Asn Gly Gly Leu Val Asp Ser Glu
            500                 505                 510

Val Pro Glu Leu Leu Pro Pro Leu Trp Pro Pro Ala Gly Lys His Met
        515                 520                 525

Val Thr Glu Val
    530
```

<210> 32
<211> 523
<212> PRT
<213> Homo sapiens

<400> 32

```
Met Thr Val Val Pro Gly Asp His Leu Leu Glu Pro Glu Val Ala Asp
  1               5                  10                  15

Gly Gly Gly Ala Pro Pro Gln Gly Gly Cys Gly Gly Gly Gly Cys Asp
            20                  25                  30

Arg Tyr Glu Pro Leu Pro Pro Ser Leu Pro Ala Ala Gly Glu Gln Asp
        35                  40                  45

Cys Cys Gly Glu Arg Val Val Ile Asn Ile Ser Gly Leu Arg Phe Glu
    50                  55                  60

Thr Gln Leu Lys Thr Leu Cys Gln Phe Pro Glu Thr Leu Leu Gly Asp
65                  70                  75                  80

Pro Lys Arg Arg Met Arg Tyr Phe Asp Pro Leu Arg Asn Glu Tyr Phe
                85                  90                  95
```

```
Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala Ile Leu Tyr Tyr Tyr Gln
            100                 105                 110

Ser Gly Gly Arg Ile Arg Arg Pro Val Asn Val Pro Ile Asp Ile Phe
        115                 120                 125

Ser Glu Glu Ile Arg Phe Tyr Gln Leu Gly Glu Glu Ala Met Glu Lys
    130                 135                 140

Phe Arg Glu Asp Glu Gly Phe Leu Arg Glu Glu Glu Arg Pro Leu Pro
145                 150                 155                 160

Arg Arg Asp Phe Gln Arg Gln Val Trp Leu Leu Phe Glu Tyr Pro Glu
                165                 170                 175

Ser Ser Gly Pro Ala Arg Gly Ile Ala Ile Val Ser Val Leu Val Ile
            180                 185                 190

Leu Ile Ser Ile Val Ile Phe Cys Leu Glu Thr Leu Pro Glu Phe Arg
        195                 200                 205

Asp Glu Lys Asp Tyr Pro Ala Ser Thr Ser Gln Asp Ser Phe Glu Ala
    210                 215                 220

Ala Gly Asn Ser Thr Ser Gly Ser Arg Ala Gly Ala Ser Ser Phe Ser
225                 230                 235                 240

Asp Pro Phe Phe Val Val Glu Thr Leu Cys Ile Ile Trp Phe Ser Phe
                245                 250                 255

Glu Leu Leu Val Arg Phe Phe Ala Cys Pro Ser Lys Ala Thr Phe Ser
            260                 265                 270

Arg Asn Ile Met Asn Leu Ile Asp Ile Val Ala Ile Ile Pro Tyr Phe
        275                 280                 285

Ile Thr Leu Gly Thr Glu Leu Ala Glu Arg Gln Gly Asn Gly Gln Gln
    290                 295                 300

Ala Met Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe
305                 310                 315                 320

Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly
                325                 330                 335

Gln Thr Leu Lys Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe
            340                 345                 350

Leu Phe Ile Gly Val Ile Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu
        355                 360                 365

Ala Asp Asp Pro Thr Ser Gly Phe Ser Ser Ile Pro Asp Ala Phe Trp
    370                 375                 380

Trp Ala Val Val Thr Met Thr Thr Val Gly Tyr Gly Asp Met His Pro
385                 390                 395                 400
```

```
Val Thr Ile Gly Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala Gly
                405                 410                 415

Val Leu Thr Ile Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Asn
            420                 425                 430

Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Glu Gln Ser Gln Tyr Met
        435                 440                 445

His Val Gly Ser Cys Gln His Leu Ser Ser Ser Ala Glu Glu Leu Arg
    450                 455                 460

Lys Ala Arg Ser Asn Ser Thr Leu Ser Lys Ser Glu Tyr Met Val Ile
465                 470                 475                 480

Glu Glu Gly Gly Met Asn His Ser Ala Phe Pro Gln Thr Pro Phe Lys
                485                 490                 495

Thr Gly Asn Ser Thr Ala Thr Cys Thr Thr Asn Asn Asn Pro Asn Ser
            500                 505                 510

Cys Val Asn Ile Lys Lys Ile Phe Thr Asp Val
        515                 520
```

<210> 33
<211> 525
<212> PRT
<213> Rattus norvegicus

<400> 33

```
Met Thr Val Val Pro Gly Asp His Leu Leu Glu Pro Glu Ala Ala Gly
  1               5                  10                  15

Gly Gly Gly Gly Asp Pro Pro Gln Gly Gly Cys Val Ser Gly Gly Gly
             20                  25                  30

Cys Asp Arg Tyr Glu Pro Leu Pro Pro Ala Leu Pro Ala Ala Gly Glu
         35                  40                  45

Gln Asp Cys Cys Gly Glu Arg Val Val Ile Asn Ile Ser Gly Leu Arg
     50                  55                  60

Phe Glu Thr Gln Leu Lys Thr Leu Cys Gln Phe Pro Glu Thr Leu Leu
 65                  70                  75                  80

Gly Asp Pro Lys Arg Arg Met Arg Tyr Phe Asp Pro Leu Arg Asn Glu
                 85                  90                  95

Tyr Phe Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala Ile Leu Tyr Tyr
            100                 105                 110

Tyr Gln Ser Gly Gly Arg Ile Arg Arg Pro Val Asn Val Pro Ile Asp
        115                 120                 125

Ile Phe Ser Glu Glu Ile Arg Phe Tyr Gln Leu Gly Glu Glu Ala Met
```

```
    130                 135                 140

Glu Lys Phe Arg Glu Asp Glu Gly Phe Leu Arg Glu Glu Glu Arg Pro
145                 150                 155                 160

Leu Pro Arg Arg Asp Phe Gln Arg Gln Val Trp Leu Leu Phe Glu Tyr
                165                 170                 175

Pro Glu Ser Ser Arg Pro Ala Arg Gly Ile Ala Ile Val Ser Val Leu
            180                 185                 190

Val Ile Leu Ile Ser Ile Val Ile Phe Cys Leu Glu Thr Leu Pro Glu
        195                 200                 205

Phe Arg Asp Glu Lys Asp Tyr Pro Ala Ser Pro Ser Gln Asp Val Phe
    210                 215                 220

Glu Ala Ala Asn Asn Ser Thr Ser Gly Ala Ser Ser Gly Ala Ser Ser
225                 230                 235                 240

Phe Ser Asp Pro Phe Phe Val Val Glu Thr Leu Cys Ile Ile Trp Phe
                245                 250                 255

Ser Phe Glu Leu Leu Val Arg Phe Phe Ala Cys Pro Ser Lys Ala Thr
            260                 265                 270

Phe Ser Arg Asn Ile Met Asn Leu Ile Asp Ile Val Ala Ile Ile Pro
        275                 280                 285

Tyr Phe Ile Thr Leu Gly Thr Glu Leu Ala Glu Arg Gln Gly Asn Gly
    290                 295                 300

Gln Gln Ala Met Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg
305                 310                 315                 320

Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile
                325                 330                 335

Leu Gly Gln Thr Leu Lys Ala Ser Met Arg Glu Leu Gly Leu Leu Ile
            340                 345                 350

Phe Phe Leu Phe Ile Gly Val Ile Leu Phe Ser Ser Ala Val Tyr Phe
        355                 360                 365

Ala Glu Ala Asp Asp Pro Ser Ser Gly Phe Asn Ser Ile Pro Asp Ala
    370                 375                 380

Phe Trp Trp Ala Val Val Thr Met Thr Thr Val Gly Tyr Gly Asp Met
385                 390                 395                 400

His Pro Val Thr Ile Gly Gly Lys Ile Val Gly Ser Leu Cys Ala Ile
                405                 410                 415

Ala Gly Val Leu Thr Ile Ala Leu Pro Val Pro Val Ile Val Ser Asn
            420                 425                 430

Phe Asn Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Glu Gln Ala Gln
```

```
        435                 440                 445

Tyr Met His Val Gly Ser Cys Gln His Leu Ser Ser Ser Ala Glu Glu
    450                 455                 460

Leu Arg Lys Ala Arg Ser Asn Ser Thr Leu Ser Lys Ser Glu Tyr Met
465                 470                 475                 480

Val Ile Glu Glu Gly Gly Met Asn His Ser Ala Phe Pro Gln Thr Pro
                485                 490                 495

Phe Lys Thr Gly Asn Ser Thr Ala Thr Cys Thr Thr Asn Asn Asn Pro
            500                 505                 510

Asn Ser Cys Val Asn Ile Lys Lys Ile Phe Thr Asp Val
        515                 520                 525
```

<210> 34
<211> 360
<212> DNA
<213> Homo sapiens

<400> 34
agtttggatt tgcttatgaa aaagataaaa ggaaaagacc tacagctctt agaaatgaac 60
aaagagaatg aagtattgaa aatcaagctg caagcctcca gagaagcagg agcagcagct 120
ctgagaaacg tggcccagag attatttgaa aactaccaaa cgcaatctga agaagtgaga 180
aagaagcagg agggcagtaa acaattactc caggttaaca agcttgaaaa agaacagaaa 240
ttgaaacaac atgttgaaaa tctgaatcaa gttgctgaaa aacttgaaga aaaacacagt 300
caaattacag aattggagaa ccttgtacag agaatggaaa aggaaaagag aacactacta 360

<210> 35
<211> 360
<212> DNA
<213> Homo sapiens

<400> 35
agtttggatt tgcttatgaa aaagataaaa ggaaaagacc tacagctctt agaaatgaac 60
aaagagaatg aagtattgaa aatcaagctg caagcctcca gagaagcagg agcagcagct 120
ctgagaaacg tggcccagag attatttgaa aactaccaaa cgcaatctga agaagtgaga 180
aagaagcagg aggacagtaa acaattactc caggttaaca agcttgaaaa agaacagaaa 240
ttgaaacaac atgttgaaaa tctgaatcaa gttgctgaaa aacttgaaga aaaacacagt 300
caaattacag aattggagaa ccttgtacag agaatggaaa aggaaaagag aacactacta 360

<210> 36
<211> 170
<212> PRT
<213> Homo sapiens

<400> 36
```
Ala Leu Arg Asn Val Ala Gln Arg Leu Phe Glu Asn Tyr Gln Thr Gln
  1               5                  10                  15

Ser Glu Glu Val Arg Lys Lys Gln Glu Gly Ser Lys Gln Leu Leu Gln
            20                  25                  30
```

```
Val Asn Lys Leu Glu Lys Glu Gln Lys Leu Lys Gln His Val Glu Asn
         35                  40                  45

Leu Asn Gln Val Ala Glu Lys Leu Glu Glu Lys His Ser Gln Ile Thr
     50                  55                  60

Glu Leu Glu Asn Leu Val Gln Arg Met Glu Lys Glu Lys Arg Thr Leu
 65                  70                  75                  80

Leu Glu Arg Lys Leu Ser Leu Glu Asn Lys Leu Leu Gln Leu Lys Ser
                 85                  90                  95

Ser Ala Thr Tyr Gly Lys Ser Cys Gln Asp Leu Gln Arg Glu Ile Ser
            100                 105                 110

Ile Leu Gln Glu Gln Ile Ser His Leu Gln Phe Val Ile His Ser Gln
        115                 120                 125

His Gln Asn Leu Arg Ser Val Ile Gln Glu Met Glu Gly Leu Lys Asn
    130                 135                 140

Asn Leu Lys Glu Gln Asp Lys Arg Ile Glu Asn Leu Arg Glu Lys Val
145                 150                 155                 160

Asn Ile Leu Glu Ala Gln Asn Lys Glu Leu
                165                 170
```

<210> 37
<211> 170
<212> PRT
<213> Bos taurus

<400> 37

```
Ser Leu Arg Lys Thr Val Gln Asp Leu Leu Val Lys Leu Gln Glu Ala
  1               5                  10                  15

Glu Gln Gln His Gln Ser Asp Cys Ser Ala Phe Lys Val Thr Leu Ser
            20                  25                  30

Gln Tyr Gln Arg Glu Ala Lys Gln Ser Gln Val Ala Leu Gln Arg Ala
        35                  40                  45

Glu Asp Arg Ala Glu Gln Lys Glu Ala Glu Val Gly Glu Leu Gln Arg
    50                  55                  60

Arg Leu Gln Gly Met Glu Thr Glu Tyr Gln Ala Ile Leu Ala Lys Val
65                  70                  75                  80

Arg Glu Gly Glu Thr Ala Leu Glu Glu Leu Arg Ser Lys Asn Val Asp
                85                  90                  95

Cys Gln Ala Glu Gln Glu Lys Ala Ala Asn Leu Glu Lys Glu Val Ala
            100                 105                 110

Gly Leu Arg Glu Lys Ile His His Leu Asp Asp Met Leu Lys Ser Gln
```

```
        115                 120                 125

Gln Arg Lys Val Arg Gln Met Ile Glu Gln Leu Gln Asn Ser Lys Ala
    130                 135                 140

Val Ile Gln Ser Lys Asp Thr Thr Ile Gln Glu Leu Lys Glu Lys Ile
145                 150                 155                 160

Ala Tyr Leu Glu Ala Glu Asn Leu Glu Met
                165                 170
```

<210> 38
<211> 1056
<212> DNA
<213> Homo sapiens

<400> 38
atgactttga ggcttttaga agactggtgc aggggggatgg acatgaaccc tcggaaagcg 60
ctattgattg ccggcatctc ccagagctgc agtgtggcag aaatcgagga ggctctgcag 120
gctggtttag ctcccttggg ggagtacaga ctgcttggaa ggatgttcag gagggatgag 180
aacaggaaag tagccttagt agggcttact gcggagacta gtcacgccct ggtccctaag 240
gagataccgg gaaaaggggg tatctggaga gtgatcttta agccccctga cccagataat 300
acatttttaa gcagattaaa tgaattttta gcgggagagg gcatgacagt gggtgagttg 360
agcagagctc ttggacatga aaatggctcc ttagacccag agcagggcat gatcccggaa 420
atgtgggccc ctatgttggc acaggcatta gaggctcttc agcctgccct gcaatgcttg 480
aagtataaaa agctgagagt gttctcgggc agggagtctc cagaaccagg agaagaagaa 540
tttggacgct ggatgtttca tactactcag atgataaagg cgtggcaggt gccagatgta 600
gagaagagaa ggcgattgct agagagcctt cgaggcccag cacttgatgt tattcgtgtc 660
ctcaagataa acaatccttt aattactgtc gatgaatgtc tgcaggctct tgaggaggta 720
tttggggtta cagataatcc tagggagttg caggtcaaat atctaaccac ttaccagaag 780
gatgaggaaa agttgtcggc ttatgtacta aggctggagc ctttgttaca gaagctggta 840
cagagaggag caattgagag agatgctgtg aatcaggccc gcctagacca agtcattgct 900
ggggcagtcc acaaaacaat tcgcagagag cttaatctgc cagaggatgg cccagcccct 960
ggtttcttgc agttattggt actaataaag gattatgagg cagctgagga ggaggaggcc 1020
cttctccagg caatattgga aggtaatttc acctga 1056

<210> 39
<211> 321
<212> PRT
<213> Homo sapiens

<400> 39
```
Met Thr Leu Arg Leu Leu Glu Asp Trp Cys Arg Gly Met Asp Met Asn
  1               5                  10                  15

Pro Arg Lys Ala Leu Leu Ile Ala Gly Ile Ser Gln Ser Cys Ser Val
             20                  25                  30

Ala Glu Ile Glu Glu Ala Leu Gln Ala Gly Leu Ala Pro Leu Gly Glu
         35                  40                  45

Tyr Arg Leu Leu Gly Arg Met Phe Arg Arg Asp Glu Asn Arg Lys Val
     50                  55                  60

Ala Leu Val Gly Leu Thr Ala Glu Thr Ser His Ala Leu Val Pro Lys
```

```
 65                  70                  75                  80

Glu Ile Pro Gly Lys Gly Gly Ile Trp Arg Val Ile Phe Lys Pro Pro
                 85                  90                  95

Asp Pro Asp Asn Thr Phe Leu Ser Arg Leu Asn Glu Phe Leu Ala Gly
            100                 105                 110

Glu Gly Met Thr Val Gly Glu Leu Ser Arg Ala Leu Gly His Glu Asn
        115                 120                 125

Gly Ser Leu Asp Pro Glu Gln Gly Met Ile Pro Glu Met Trp Ala Pro
    130                 135                 140

Met Leu Ala Gln Ala Leu Glu Ala Leu Gln Pro Ala Leu Gln Cys Leu
145                 150                 155                 160

Lys Tyr Lys Lys Leu Arg Val Phe Ser Gly Arg Glu Ser Pro Glu Pro
                165                 170                 175

Gly Glu Glu Glu Phe Gly Arg Trp Met Phe His Thr Thr Gln Met Ile
            180                 185                 190

Lys Ala Trp Gln Val Pro Asp Val Glu Lys Arg Arg Arg Leu Leu Glu
        195                 200                 205

Ser Leu Arg Gly Pro Ala Leu Asp Val Ile Arg Val Leu Lys Ile Asn
    210                 215                 220

Asn Pro Leu Ile Thr Val Asp Glu Cys Leu Gln Ala Leu Glu Glu Val
225                 230                 235                 240

Phe Gly Val Thr Asp Asn Pro Arg Glu Leu Gln Val Lys Tyr Leu Thr
                245                 250                 255

Thr Tyr Gln Lys Asp Glu Glu Lys Leu Ser Ala Tyr Val Leu Arg Leu
            260                 265                 270

Glu Pro Leu Leu Gln Lys Leu Val Gln Arg Gly Ala Ile Glu Arg Asp
        275                 280                 285

Ala Val Asn Gln Ala Arg Leu Asp Gln Val Ile Ala Gly Ala Val His
    290                 295                 300

Lys Thr Ile Arg Arg Glu Leu Asn Leu Pro Glu Asp Gly Pro Ala Pro
305                 310                 315                 320

Gly
```

<210> 40
<211> 318
<212> PRT
<213> Homo sapiens

<220>

<221> VARIANT
<222> (20)
<223> Wherein Xaa is any amino acid as defined in the specification

<400> 40

```
Met Ala Met Thr Leu Leu Glu Asp Trp Cys Arg Gly Met Asp Val Asn
  1               5                  10                  15

Ser Gln Arg Xaa Leu Leu Val Trp Gly Ile Pro Val Asn Cys Asp Glu
             20                  25                  30

Ala Glu Ile Glu Glu Thr Leu Gln Ala Ala Met Pro Gln Val Ser Tyr
         35                  40                  45

Arg Met Leu Gly Arg Met Phe Trp Arg Glu Glu Asn Ala Lys Ala Ala
     50                  55                  60

Leu Leu Glu Leu Thr Gly Ala Val Asp Tyr Ala Ala Ile Pro Arg Glu
 65                  70                  75                  80

Met Pro Gly Lys Gly Gly Val Trp Lys Val Leu Phe Lys Pro Pro Thr
                 85                  90                  95

Ser Asp Ala Glu Phe Leu Glu Arg Leu His Leu Phe Leu Ala Arg Glu
            100                 105                 110

Gly Trp Thr Val Gln Asp Val Ala Arg Val Leu Gly Phe Gln Asn Pro
        115                 120                 125

Thr Pro Thr Pro Gly Pro Glu Met Pro Ala Glu Met Leu Asn Tyr Ile
    130                 135                 140

Leu Asp Asn Val Ile Gln Pro Leu Val Glu Ser Ile Trp Tyr Lys Arg
145                 150                 155                 160

Leu Thr Leu Phe Ser Gly Lys Gly His Pro Arg Ala Trp Arg Gly Asn
                165                 170                 175

Phe Asp Pro Trp Leu Glu His Thr Asn Glu Val Leu Glu Glu Trp Gln
            180                 185                 190

Val Ser Asp Val Glu Lys Arg Arg Arg Leu Met Glu Ser Leu Arg Gly
        195                 200                 205

Pro Ala Ala Asp Val Ile Arg Ile Leu Lys Ser Asn Asn Pro Ala Ile
    210                 215                 220

Thr Thr Ala Glu Cys Leu Lys Ala Leu Glu Gln Val Phe Gly Ser Val
225                 230                 235                 240

Glu Ser Ser Arg Asp Ala Gln Ile Lys Phe Leu Asn Thr Tyr Gln Asn
                245                 250                 255

Pro Gly Glu Lys Leu Ser Ala Tyr Val Ile Arg Leu Glu Pro Leu Leu
            260                 265                 270
```

```
Gln Lys Val Val Glu Lys Gly Ala Ile Asp Lys Asp Asn Val Asn Gln
        275                 280                 285

Ala Arg Leu Glu Gln Val Ile Ala Gly Ala Asn His Ser Gly Ala Ile
    290                 295                 300

Arg Arg Gln Leu Trp Leu Thr Gly Ala Gly Glu Gly Pro Gly
305                 310                 315
```

<210> 41
<211> 120
<212> PRT
<213> Homo sapiens

<400> 41

```
Leu Arg Leu Leu Glu Asp Trp Cys Arg Gly Met Asp Met Asn Pro Arg
  1               5                  10                  15

Lys Ala Leu Leu Ile Ala Gly Ile Ser Gln Ser Cys Ser Val Ala Glu
             20                  25                  30

Ile Glu Glu Ala Leu Gln Ala Gly Leu Ala Pro Leu Gly Glu Tyr Arg
         35                  40                  45

Leu Leu Gly Arg Met Phe Arg Arg Asp Glu Asn Arg Lys Val Ala Leu
     50                  55                  60

Val Gly Leu Thr Ala Glu Thr Ser His Ala Leu Val Pro Lys Glu Ile
 65                  70                  75                  80

Pro Gly Lys Gly Gly Ile Trp Arg Val Ile Phe Lys Pro Pro Asp Pro
                 85                  90                  95

Asp Asn Thr Phe Leu Ser Arg Leu Asn Glu Phe Leu Ala Gly Glu Gly
            100                 105                 110

Met Thr Val Gly Glu Leu Ser Arg
        115                 120
```

<210> 42
<211> 120
<212> PRT
<213> Homo sapiens

<400> 42

```
Leu Ala Leu Leu Glu Asp Trp Cys Arg Ile Met Ser Val Asp Glu Gln
  1               5                  10                  15

Lys Ser Leu Met Val Thr Gly Ile Pro Ala Asp Phe Glu Glu Ala Glu
             20                  25                  30

Ile Gln Glu Val Leu Gln Glu Thr Leu Lys Ser Leu Gly Arg Tyr Arg
         35                  40                  45

Leu Leu Gly Lys Ile Phe Arg Lys Gln Glu Asn Ala Asn Ala Val Leu
```

```
     50                  55                  60

Leu Glu Leu Leu Glu Asp Thr Asp Val Ser Ala Ile Pro Ser Glu Val
 65                  70                  75                  80

Gln Gly Lys Gly Gly Val Trp Lys Val Ile Phe Lys Thr Pro Asn Gln
                 85                  90                  95

Asp Thr Glu Phe Leu Glu Arg Leu Asn Leu Phe Leu Glu Lys Glu Gly
            100                 105                 110

Gln Thr Val Ser Gly Met Phe Arg
        115                 120
```

<210> 43
<211> 438
<212> DNA
<213> Homo sapiens

<400> 43
cacgctccgc acaccagcct gcgcgcacca tgggccaccg ttcagcagct ggaaggaaga 60
tggcgcctgg cggacagcaa aggctttgat gcatacatga agaaactagg agtgggaata 120
tctttgcgca atatgggcgc aatggccaaa ccagactgta tcatcacttg tgatggcaaa 180
aacctcacca taaaaactga gagcactttg aaaacaacac agttttcttg taccctggga 240
gagaagtttg aaggaaccac agctgttggc agaaaaactc agactgtctg cagctttaca 300
gatggtgcat tggttccgca tcaggagtgg gatgggaagg aaaacacaat aacaagaaaa 360
ttgaaagatg catcagtggt ggattgtgtc acgaacaatg tcacctgtac tcggatctat 420
gaaaaagtag aataaaaa 438

<210> 44
<211> 444
<212> DNA
<213> Homo sapiens

<400> 44
ccctctctgc acgccagccc gcccgcaccc accatggcca cagttcagca gctggaagga 60
agatggcgcc tggtggacag caaaggcttt gatgaataca tgaaggagct aggagtggga 120
atagctttgc gaaaaatggg cgcaatggcc aagccagatt gtatcatcac ttgtgatggt 180
aaaaacctca ccataaaaac tgagagcact ttgaaaacaa cacagttttc ttgtaccctg 240
ggagagaagt ttgaagaaac cacagctgat ggcagaaaaa ctcagactgt ctgcaacttt 300
acagatggtg cattggttca gcatcaggag tgggatggga aggaaagcac aataacaaga 360
aaattgaaag atgggaaatt agtggtggag tgtgtcatga acaatgtcac ctgtactcgg 420
atctatgaaa aagtagaata aaaa 444

<210> 45
<211> 403
<212> DNA
<213> Homo sapiens

<400> 45
ggccaccgtt cagcagctgg aaggaagatg gcgcctggcg gacagcaaag gctttgatgc 60
atacatgaag aaactaggag tgggaatatc tttgcgcaat atgggcgcaa tggccaaacc 120
agactgtatc atcacttgtg atggcaaaaa cctcaccata aaaactgaga gcactttgaa 180
aacaacacag ttttcttgta ccctgggaga gaagtttgaa ggaaccacag ctgttggcag 240

aaaaactcag actgtctgca gctttacaga tggtgcattg gttccgcatc aggagtggga 300
tgggaaggaa aacacaataa caagaaaatt gaaagatgca tcagtggtgg attgtgtcac 360
gaacaatgtc acctgtactc ggatctatga aaaagtagaa taa 403

<210> 46
<211> 406
<212> DNA
<213> Homo sapiens

<400> 46
ggccacagtt cagcagctgg aaggaagatg gcgcctggtg gacagcaaag gctttgatga 60
atacatgaag gagctaggag tgggaatagc tttgcgaaaa atgggcgcaa tggccaagcc 120
agattgtatc atcacttgtg atggtaaaaa cctcaccata aaaactgaga gcactttgaa 180
aacaacacag ttttcttgta ccctgggaga gaagtttgaa gaaaccacag ctgatggcag 240
aaaaactcag actgtctgca actttacaga tggtgcattg gttcagcatc aggagtggga 300
tgggaaggaa agcacaataa caagaaaatt gaaagatggg aaattagtgg tggagtgtgt 360
catgaacaat gtcacctgta ctcggatcta tgaaaaagta gaataa 406

<210> 47
<211> 133
<212> PRT
<213> Homo sapiens

<400> 47
Ala Thr Val Gln Gln Leu Glu Gly Arg Trp Arg Leu Ala Asp Ser Lys
1 5 10 15

Gly Phe Asp Ala Tyr Met Lys Lys Leu Gly Val Gly Ile Ser Leu Arg
20 25 30

Asn Met Gly Ala Met Ala Lys Pro Asp Cys Ile Ile Thr Cys Asp Gly
35 40 45

Lys Asn Leu Thr Ile Lys Thr Glu Ser Thr Leu Lys Thr Thr Gln Phe
50 55 60

Ser Cys Thr Leu Gly Glu Lys Phe Glu Gly Thr Thr Ala Val Gly Arg
65 70 75 80

Lys Thr Gln Thr Val Cys Ser Phe Thr Asp Gly Ala Leu Val Pro His
85 90 95

Gln Glu Trp Asp Gly Lys Glu Asn Thr Ile Thr Arg Lys Leu Lys Asp
100 105 110

Ala Ser Val Val Asp Cys Val Thr Asn Asn Val Thr Cys Thr Arg Ile
115 120 125

Tyr Glu Lys Val Glu
130

<210> 48
<211> 134
<212> PRT

<213> Homo sapiens

<400> 48
Ala Thr Val Gln Gln Leu Glu Gly Arg Trp Arg Leu Val Asp Ser Lys
1 5 10 15

Gly Phe Asp Glu Tyr Met Lys Glu Leu Gly Val Gly Ile Ala Leu Arg
20 25 30

Lys Met Gly Ala Met Ala Lys Pro Asp Cys Ile Ile Thr Cys Asp Gly
35 40 45

Lys Asn Leu Thr Ile Lys Thr Glu Ser Thr Leu Lys Thr Thr Gln Phe
50 55 60

Ser Cys Thr Leu Gly Glu Lys Phe Glu Glu Thr Thr Ala Asp Gly Arg
65 70 75 80

Lys Thr Gln Thr Val Cys Asn Phe Thr Asp Gly Ala Leu Val Gln His
85 90 95

Gln Glu Trp Asp Gly Lys Glu Ser Thr Ile Thr Arg Lys Leu Lys Asp
100 105 110

Gly Lys Leu Val Val Glu Cys Val Met Asn Asn Val Thr Cys Thr Arg
115 120 125

Ile Tyr Glu Lys Val Glu
130

<210> 49
<211> 135
<212> PRT
<213> Homo sapiens

<400> 49
Met Ala Thr Val Gln Gln Leu Glu Gly Arg Trp Arg Leu Val Asp Ser
1 5 10 15

Lys Gly Phe Asp Glu Tyr Met Lys Glu Leu Gly Val Gly Ile Ala Leu
20 25 30

Arg Lys Met Gly Ala Met Ala Lys Pro Asp Cys Ile Ile Thr Cys Asp
35 40 45

Gly Lys Asn Leu Thr Ile Lys Thr Glu Ser Thr Leu Lys Thr Thr Gln
50 55 60

Phe Ser Cys Thr Leu Gly Glu Lys Phe Glu Glu Thr Thr Ala Asp Gly
65 70 75 80

Arg Lys Thr Gln Thr Val Cys Asn Phe Thr Asp Gly Ala Leu Val Gln
85 90 95

His Gln Glu Trp Asp Gly Lys Glu Ser Thr Ile Thr Arg Lys Leu Lys
100 105 110

```
Asp Gly Lys Leu Val Val Glu Cys Val Met Asn Asn Val Thr Cys Thr
        115                 120                 125

Arg Ile Tyr Glu Lys Val Glu
    130                 135


<210> 50
<211> 135
<212> PRT
<213> Homo sapiens

<400> 50
Met Ala Thr Val Gln Gln Leu Glu Gly Arg Trp Arg Leu Val Asp Ser
  1               5                  10                  15

Lys Gly Phe Asp Glu Tyr Met Lys Glu Leu Gly Val Gly Ile Ala Leu
             20                  25                  30

Arg Lys Met Gly Ala Met Ala Lys Pro Asp Cys Ile Ile Thr Cys Asp
         35                  40                  45

Gly Lys Asn Leu Thr Ile Lys Thr Glu Ser Thr Leu Lys Thr Thr Gln
     50                  55                  60

Phe Ser Cys Thr Leu Gly Glu Lys Phe Glu Glu Thr Thr Ala Asp Gly
 65                  70                  75                  80

Arg Lys Thr Gln Thr Val Cys Asn Phe Thr Asp Gly Ala Leu Val Gln
                 85                  90                  95

His Gln Glu Trp Asp Gly Lys Glu Ser Thr Ile Thr Arg Lys Leu Lys
            100                 105                 110

Asp Gly Lys Leu Val Val Glu Cys Val Met Asn Asn Val Thr Cys Thr
        115                 120                 125

Arg Ile Tyr Glu Lys Val Glu
    130                 135


<210> 51
<211> 135
<212> PRT
<213> Rattus norvegicus

<400> 51
Met Ala Ser Leu Lys Asp Leu Glu Gly Lys Trp Arg Leu Val Glu Ser
  1               5                  10                  15

His Gly Phe Glu Asp Tyr Met Lys Glu Leu Gly Val Gly Leu Ala Leu
             20                  25                  30

Arg Lys Met Gly Ala Met Ala Lys Pro Asp Cys Ile Ile Thr Leu Asp
         35                  40                  45
```

```
Gly Asn Asn Leu Thr Val Lys Thr Glu Ser Thr Val Lys Thr Thr Val
     50                  55                  60

Phe Ser Cys Thr Leu Gly Glu Lys Phe Asp Glu Thr Thr Ala Asp Gly
 65                  70                  75                  80

Arg Lys Thr Glu Thr Val Cys Thr Phe Thr Asp Gly Ala Leu Val Gln
                 85                  90                  95

His Gln Lys Trp Glu Gly Lys Glu Ser Thr Ile Thr Arg Lys Leu Lys
            100                 105                 110

Asp Gly Lys Met Val Val Glu Cys Val Met Asn Asn Ala Ile Cys Thr
        115                 120                 125

Arg Val Tyr Glu Lys Val Gln
    130                 135
```

<210> 52
<211> 135
<212> PRT
<213> Mus musculus

<400> 52

```
Met Ala Ser Leu Lys Asp Leu Glu Gly Lys Trp Arg Leu Met Glu Ser
  1               5                  10                  15

His Gly Phe Glu Glu Tyr Met Lys Glu Leu Gly Val Gly Leu Ala Leu
            20                  25                  30

Arg Lys Met Ala Ala Met Ala Lys Pro Asp Cys Ile Ile Thr Cys Asp
        35                  40                  45

Gly Asn Asn Ile Thr Val Lys Thr Glu Ser Thr Val Lys Thr Thr Val
     50                  55                  60

Phe Ser Cys Asn Leu Gly Glu Lys Phe Asp Glu Thr Thr Ala Asp Gly
 65                  70                  75                  80

Arg Lys Thr Glu Thr Val Cys Thr Phe Gln Asp Gly Ala Leu Val Gln
                 85                  90                  95

His Gln Gln Trp Asp Gly Lys Glu Ser Thr Ile Thr Arg Lys Leu Lys
            100                 105                 110

Asp Gly Lys Met Ile Val Glu Cys Val Met Asn Asn Ala Thr Cys Thr
        115                 120                 125

Arg Val Tyr Glu Lys Val Gln
    130                 135
```

<210> 53
<211> 228
<212> DNA
<213> Homo sapiens

<400> 53
gctgtagaca tggggatcgg atgctggaga aacccccctgc tgctgctgat tgccctggtc 60
ctgtcagcca agctgggtca cttccaaagg tgggagggct tccagcagaa gctcatgagc 120
aagaagaaca tgaattcaac actcaacttc ttcattcaat cctacaacaa tgccagcaac 180
gacacctact tatatcgagt ccagaggcta attcgaagtc agatgcag 228

<210> 54
<211> 228
<212> DNA
<213> Homo sapiens

<400> 54
gctgtagaca tggggatcgg atgctggaga aacccccctgc tgctgctgat tgccctggtc 60
ctgtcagcca agctgggtca cttccaaagg tgggagggct tccagcagaa gctcatgagc 120
aagaagaaca tgaattcaac actcaacttc ttcattcaat cctacaacaa tgccagcaac 180
gacacctact tatatcgagt ccagaggcta attcgaagtc agatgcag 228

<210> 55
<211> 98
<212> PRT
<213> Homo sapiens

<400> 55
Ser Lys Lys Asn Met Asn Ser Thr Leu Asn Phe Phe Ile Gln Ser Tyr
1 5 10 15

Asn Asn Ala Ser Asn Asp Thr Tyr Leu Tyr Arg Val Gln Arg Leu Ile
20 25 30

Arg Ser Gln Met Gln Leu Thr Thr Gly Val Glu Tyr Ile Val Thr Val
35 40 45

Lys Ile Gly Trp Thr Lys Cys Lys Arg Asn Asp Thr Ser Asn Ser Ser
50 55 60

Cys Pro Leu Gln Thr Lys Lys Leu Arg Lys Ser Leu Ile Cys Glu Ser
65 70 75 80

Leu Ile Tyr Thr Met Pro Trp Leu Asn Tyr Phe Gln Leu Trp Asn Asn
85 90 95

Ser Cys

<210> 56
<211> 99
<212> PRT
<213> Rattus norvegicus

<400> 56
Ser Glu Glu Gly Val Gln Arg Ala Leu Asp Phe Ala Val Ser Glu Tyr
1 5 10 15

```
Asn Lys Gly Ser Asn Asp Ala Tyr His Ser Arg Ala Ile Gln Val Val
            20                  25                  30

Arg Ala Arg Lys Gln Leu Val Ala Gly Ile Asn Tyr Tyr Leu Asp Val
        35                  40                  45

Glu Met Gly Arg Thr Thr Cys Thr Lys Ser Gln Thr Asn Leu Thr Asn
    50                  55                  60

Cys Pro Phe His Asp Gln Pro His Leu Met Arg Lys Ala Leu Cys Ser
65                  70                  75                  80

Phe Gln Ile Tyr Ser Val Pro Trp Lys Gly Thr His Thr Leu Thr Lys
                85                  90                  95

Ser Ser Cys
```

<210> 57
<211> 99
<212> PRT
<213> Homo sapiens

<400> 57

```
Met Ser Lys Lys Asn Met Asn Ser Thr Leu Asn Phe Phe Ile Gln Ser
  1               5                  10                  15

Tyr Asn Asn Ala Ser Asn Asp Thr Tyr Leu Tyr Arg Val Gln Arg Leu
            20                  25                  30

Ile Arg Ser Gln Met Gln Leu Thr Thr Gly Val Glu Tyr Ile Val Thr
        35                  40                  45

Val Lys Ile Gly Trp Thr Lys Cys Lys Arg Asn Asp Thr Ser Asn Ser
    50                  55                  60

Ser Cys Pro Leu Gln Thr Lys Lys Leu Arg Lys Ser Leu Ile Cys Glu
65                  70                  75                  80

Ser Leu Ile Tyr Thr Met Pro Trp Leu Asn Tyr Phe Gln Leu Trp Asn
                85                  90                  95

Asn Ser Cys
```

<210> 58
<211> 101
<212> PRT
<213> Homo sapiens

<400> 58

```
Leu Asn Asp Lys Ser Val Gln Cys Ala Leu Asp Phe Ala Ile Ser Glu
  1               5                  10                  15

Tyr Asn Lys Val Ile Asn Lys Asp Glu Tyr Tyr Ser Arg Pro Leu Gln
```

```
            20                  25                  30

Val Met Ala Ala Tyr Gln Gln Ile Val Gly Gly Val Asn Tyr Tyr Phe
         35                  40                  45

Asn Val Lys Phe Gly Arg Thr Thr Cys Thr Lys Ser Gln Pro Asn Leu
     50                  55                  60

Asp Asn Cys Pro Phe Asn Asp Gln Pro Lys Leu Lys Glu Glu Glu Phe
 65                  70                  75                  80

Cys Ser Phe Gln Ile Asn Glu Val Pro Trp Glu Asp Lys Ile Ser Ile
                 85                  90                  95

Leu Asn Tyr Lys Cys
            100
```

<210> 59
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
Oligonucleotide primer

<400> 59
tctcccacag gccaggac 18

<210> 60
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
Oligonucleotide primer

<400> 60
cgcatggttt tgggattg 18

<210> 61
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
Oligonucleotide primer

<400> 61
ggatccgcca agctgggtca cttccaaagg tgg 33

<210> 62
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
Oligonucleotide primer

<400> 62
ctcgagtctg aggtttctgc ccacatgctc gg 32

<210> 63
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
Oligonucleotide primer

<400> 63
gtggagtata tagtcactgt g 21

<210> 64
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
Oligonucleotide primer

<400> 64
cacagtgact atatactcga g 21

<210> 65
<211> 378
<212> DNA
<213> Homo sapiens

<400> 65
gccaagctgg gtcacttcca aaggtgggag ggcttccagc agaagctcat gagcaagaag 60
aacatgaatt caacactcaa cttcttcatt caatcctaca acaatgccag caacgacacc 120
tacttatatc gagtccagag gctaattcga agtcagatgc agctgacgac gggagtggag 180
tatatagtca ctgtgaagat tggccggacc aaatgcaaga ggaatgacac gagcaattct 240
tcctgccccc tgcaaagcaa gaagctgaga aagagtttaa tttgcgagtc tttgatatac 300
accatgccct ggataaacta tttccagctc tggaacaatt cctgtctgga ggccgagcat 360
gtgggcagaa acctcaga 378

<210> 66
<211> 126
<212> PRT

<213> Homo sapiens

<400> 66

```
Ala Lys Leu Gly His Phe Gln Arg Trp Glu Gly Phe Gln Gln Lys Leu
  1               5                  10                  15

Met Ser Lys Lys Asn Met Asn Ser Thr Leu Asn Phe Phe Ile Gln Ser
             20                  25                  30

Tyr Asn Asn Ala Ser Asn Asp Thr Tyr Leu Tyr Arg Val Gln Arg Leu
         35                  40                  45

Ile Arg Ser Gln Met Gln Leu Thr Thr Gly Val Glu Tyr Ile Val Thr
     50                  55                  60

Val Lys Ile Gly Arg Thr Lys Cys Lys Arg Asn Asp Thr Ser Asn Ser
 65                  70                  75                  80

Ser Cys Pro Leu Gln Ser Lys Lys Leu Arg Lys Ser Leu Ile Cys Glu
                 85                  90                  95

Ser Leu Ile Tyr Thr Met Pro Trp Ile Asn Tyr Phe Gln Leu Trp Asn
            100                 105                 110

Asn Ser Cys Leu Glu Ala Glu His Val Gly Arg Asn Leu Arg
        115                 120                 125
```

<210> 67
<211> 378
<212> DNA
<213> Homo sapiens

<400> 67

```
gccaagctgg gtcacttcca aaggtgggag ggcttccagc agaagctcat gagcaagaag 60
aacatgaatt caacactcaa cttcttcatt caatcctaca acaatgccag caacgacacc 120
tacttatatc gagtccagag gctaattcga agtcagatgc agctgacgac gggagtggag 180
tatatagtca ctgtgaagat tggctggacc aaatgcaaga ggaatgacac gagcaattct 240
tcctgccccc tgcaaaccaa gaagctgaga aagagtttaa tttgcgagtc tttaatatac 300
accatgccct ggttaaacta tttccagctc tggaacaatt cctgtctgga gcccgagcat 360
gtgggcagaa acctcaga                                              378
```

<210> 68
<211> 126
<212> PRT
<213> Homo sapiens

<400> 68

```
Ala Lys Leu Gly His Phe Gln Arg Trp Glu Gly Phe Gln Gln Lys Leu
  1               5                  10                  15

Met Ser Lys Lys Asn Met Asn Ser Thr Leu Asn Phe Phe Ile Gln Ser
             20                  25                  30

Tyr Asn Asn Ala Ser Asn Asp Thr Tyr Leu Tyr Arg Val Gln Arg Leu
         35                  40                  45
```

```
Ile Arg Ser Gln Met Gln Leu Thr Thr Gly Val Glu Tyr Ile Val Thr
     50                  55                  60

Val Lys Ile Gly Trp Thr Lys Cys Lys Arg Asn Asp Thr Ser Asn Ser
 65                  70                  75                  80

Ser Cys Pro Leu Gln Thr Lys Lys Leu Arg Lys Ser Leu Ile Cys Glu
                 85                  90                  95

Ser Leu Ile Tyr Thr Met Pro Trp Leu Asn Tyr Phe Gln Leu Trp Asn
            100                 105                 110

Asn Ser Cys Leu Glu Pro Glu His Val Gly Arg Asn Leu Arg
        115                 120                 125
```

<210> 69
<211> 1482
<212> DNA
<213> Homo sapiens

<400> 69
gtgtgtgggt gtccaggtgc ctttccagcg gcttccccag tggagttcct ggcatcaagg 60
acatttcctg taaaagggtc cttgttgaag agggaagcca gtcttaatat gatggaaaca 120
tctctgaact tctaaaagac caaggttggc gttttagctc tattaatttt acttcgtctt 180
ggccagaatt cacaatgaca acagtggcag tgaccacaga aattccccca agggataaga 240
tggaagataa ttctgccttg tatgagtcta cgtccgctca cattattgaa gaaaccgagt 300
atgtgaaaaa gattcgaact actctgcaaa agatcaggac ccagatgttt aaagatgaaa 360
taagacatga cagtacaaat cacaaactag atgcaaagca ctgtggaaac cttcaacagg 420
gctctgattc tgaaatggat ccttcttgtt gcagtttgga tttgcttatg aaaaagataa 480
aaggaaaaga cctacagctc ttagaaatga acaaagagaa tgaagtattg aaaatcaagc 540
tgcaagcctc cagagaagca ggagcagcag ctctgagaaa cgtggcccag agattatttg 600
aaaactacca aacgcaatct gaagaagtga gaaagaagca ggaggacagt aaacaattac 660
tccaggttaa caagcttgaa aaagaacaga aattgaaaca acatgttgaa aatctgaatc 720
aagttgctga aaaacttgaa gaaaaacaca gtcaaattac agaattggag aaccttgtac 780
agagaatgga aaaggaaaag agaacactac tagaaagaaa actgtctttg gaaaacaagc 840
tactgcaact caaatccagt gctacatatg gaaaaagttg ccaggatctt cagagggaga 900
tttccattct ccaggagcag atctctcatc tgcagtttgt gattcactcc caacatcaga 960
acctgcgcag tgtcatccag gagatggaag gattaaaaaa taatttaaaa gaacaagaca 1020
aaagaattga aaatctcaga gaaaaggtta acatacttga agcccagaat aaagaactaa 1080
aaacccaggt agcactttca tctgaaactc ctaggacaaa ggtatctaag gctgtctcta 1140
caagtgaatt gaagaccgaa ggtgtttccc cttatttaat gttgattagg ttacggaaat 1200
gaactggctg gatgaagatc tgatttagaa agactgcgtg agtcttattt attctctgaa 1260
acacagccca agtttcatgt taaaatggca aaatgccatt atttaaatgg aacttattac 1320
ataccaatgg ctttgcaaga agatgacatt tcagaaaatc aaacaaatct atatttaatg 1380
gatggactct tcaaaactta ccaaatagtt gaagaaacca ggtgccttct catgatggaa 1440
gacagattct gctttaaatt aaaaaaaaaa aaatctgaaa aa   1482

<210> 70
<211> 424
<212> PRT
<213> Homo sapiens

<400> 70
Gly Gly Gly Gly Cys Asp Arg Tyr Glu Pro Leu Pro Pro Ser Leu Pro

```
  1               5                  10                  15

Ala Ala Gly Glu Gln Asp Cys Cys Gly Glu Arg Val Val Ile Asn Ile
            20                  25                  30

Ser Gly Leu Arg Phe Glu Thr Gln Leu Lys Thr Leu Cys Gln Phe Pro
        35                  40                  45

Glu Thr Leu Leu Gly Asp Pro Lys Arg Arg Met Arg Tyr Phe Asp Pro
    50                  55                  60

Leu Arg Asn Glu Tyr Phe Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala
65                  70                  75                  80

Ile Leu Tyr Tyr Tyr Gln Ser Gly Gly Arg Ile Arg Arg Pro Val Asn
                85                  90                  95

Val Pro Ile Asp Ile Phe Ser Glu Glu Ile Arg Phe Tyr Gln Leu Gly
            100                 105                 110

Glu Glu Ala Met Glu Lys Phe Arg Glu Asp Glu Gly Phe Leu Arg Glu
        115                 120                 125

Glu Glu Arg Pro Leu Pro Arg Arg Asp Phe Gln Arg Gln Val Trp Leu
    130                 135                 140

Leu Phe Glu Tyr Pro Glu Ser Ser Gly Pro Ala Arg Gly Ile Ala Ile
145                 150                 155                 160

Val Ser Val Leu Val Ile Leu Ile Ser Ile Val Ile Phe Cys Leu Glu
                165                 170                 175

Thr Leu Pro Glu Phe Arg Asp Glu Lys Asp Tyr Pro Ala Ser Thr Ser
            180                 185                 190

Gln Asp Ser Phe Glu Ala Ala Gly Asn Ser Thr Ser Gly Ser Arg Ala
        195                 200                 205

Gly Ala Ser Ser Phe Ser Asp Pro Phe Phe Val Val Glu Thr Leu Cys
    210                 215                 220

Ile Ile Trp Phe Ser Phe Glu Leu Leu Val Arg Phe Phe Ala Cys Pro
225                 230                 235                 240

Ser Lys Ala Thr Phe Ser Arg Asn Ile Met Asn Leu Ile Asp Ile Val
                245                 250                 255

Ala Ile Ile Pro Tyr Phe Ile Thr Leu Gly Thr Glu Leu Ala Glu Arg
            260                 265                 270

Gln Gly Asn Gly Gln Gln Ala Met Ser Leu Ala Ile Leu Arg Val Ile
        275                 280                 285

Arg Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys
    290                 295                 300

Gly Leu Gln Ile Leu Gly Gln Thr Leu Lys Ala Ser Met Arg Glu Leu
```

```
305                 310                 315                 320

Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Ile Leu Phe Ser Ser
                325                 330                 335

Ala Val Tyr Phe Ala Glu Ala Asp Asp Pro Thr Ser Gly Phe Ser Ser
            340                 345                 350

Ile Pro Asp Ala Phe Trp Trp Ala Val Val Thr Met Thr Thr Val Gly
        355                 360                 365

Tyr Gly Asp Met His Pro Val Thr Ile Gly Gly Lys Ile Val Gly Ser
    370                 375                 380

Leu Cys Ala Ile Ala Gly Val Leu Thr Ile Ala Leu Pro Val Pro Val
385                 390                 395                 400

Ile Val Ser Asn Phe Asn Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu
                405                 410                 415

Glu Gln Ser Gln Tyr Met His Val
            420
```

<210> 71
<211> 132
<212> PRT
<213> Homo sapiens

<400> 71

```
Met Glu Pro Val Pro Gly Ser Arg Arg Gln Thr Asp Lys Gly Cys Ser
  1               5                  10                  15

Gly Asp Thr Ala His Leu Pro Leu Ser Cys Leu Gly Ala Gln Glu Ser
             20                  25                  30

Arg Arg Pro Pro Pro Arg Ala Ser Thr Lys Thr Gly Ser Gln Pro Ala
         35                  40                  45

Met Pro Ser Pro Leu Arg Pro Gln Gly Ser Ala Gly Val Leu Pro Glu
     50                  55                  60

Pro Arg Val Pro Val Gln Lys Pro Gly Ile Asn Ala Ala Ser Pro Ile
 65                  70                  75                  80

Gly Thr Val Arg Val Glu Arg Gly Arg Pro Thr Val Ser Pro Ala Gly
                 85                  90                  95

Arg Gly Ser Pro Arg Gly Gly His Val Gly Gly Leu Thr Ala Pro Ser
            100                 105                 110

Thr Pro Gly His Ser Asp His Gly Leu His Thr Gln Lys Gln Ser Gly
        115                 120                 125

Ser His Ala Trp
    130
```

<210> 72
<211> 132
<212> PRT
<213> Strongylocentrotus purpuratus

<400> 72
Met Glu Pro Val Pro Gly Ser Arg Arg Gln Thr Asp Lys Gly Cys Ser
1 5 10 15

Gly Asp Thr Ala His Leu Pro Leu Ser Cys Leu Gly Ala Gln Glu Ser
20 25 30

Arg Arg Pro Pro Pro Arg Ala Ser Thr Lys Thr Gly Ser Gln Pro Ala
35 40 45

Met Pro Ser Pro Leu Arg Pro Gln Gly Ser Ala Gly Val Leu Pro Glu
50 55 60

Pro Arg Val Pro Val Gln Lys Pro Gly Ile Asn Ala Ala Ser Pro Ile
65 70 75 80

Gly Thr Val Arg Val Glu Arg Gly Arg Pro Thr Val Ser Pro Ala Gly
85 90 95

Arg Gly Ser Pro Arg Gly Gly His Val Gly Gly Leu Thr Ala Pro Ser
100 105 110

Thr Pro Gly His Ser Asp His Gly Leu His Thr Gln Lys Gln Ser Gly
115 120 125

Ser His Ala Trp
130

<210> 73
<211> 312
<212> PRT
<213> Homo sapiens

<400> 73
Met Thr Leu Arg Leu Leu Glu Asp Trp Cys Arg Gly Met Asp Met Asn
1 5 10 15

Pro Arg Lys Ala Leu Leu Ile Ala Gly Ile Ser Gln Ser Cys Ser Val
20 25 30

Ala Glu Ile Glu Glu Ala Leu Gln Ala Gly Leu Ala Pro Leu Gly Glu
35 40 45

Tyr Arg Leu Leu Gly Arg Met Phe Arg Arg Asp Glu Asn Arg Lys Val
50 55 60

Ala Leu Val Gly Leu Thr Ala Glu Thr Ser His Ala Leu Val Pro Lys
65 70 75 80

Glu Ile Pro Gly Lys Gly Gly Ile Trp Arg Val Ile Phe Lys Pro Pro

```
                85                  90                  95

Asp Pro Asp Asn Thr Phe Leu Ser Arg Leu Asn Glu Phe Leu Ala Gly
            100                 105                 110

Glu Gly Met Thr Val Gly Glu Leu Ser Arg Ala Leu Gly His Glu Asn
        115                 120                 125

Gly Ser Leu Asp Pro Glu Gln Gly Met Ile Pro Glu Met Trp Ala Pro
    130                 135                 140

Met Leu Ala Gln Ala Leu Glu Ala Leu Gln Pro Ala Leu Gln Cys Leu
145                 150                 155                 160

Lys Tyr Lys Lys Leu Arg Val Phe Ser Gly Arg Glu Ser Pro Glu Pro
                165                 170                 175

Gly Glu Glu Glu Phe Gly Arg Trp Met Phe His Thr Thr Gln Met Ile
            180                 185                 190

Lys Ala Trp Gln Val Pro Asp Val Glu Lys Arg Arg Arg Leu Leu Glu
        195                 200                 205

Ser Leu Arg Gly Pro Ala Leu Asp Val Ile Arg Val Leu Lys Ile Asn
    210                 215                 220

Asn Pro Leu Ile Thr Val Asp Glu Cys Leu Gln Ala Leu Glu Glu Val
225                 230                 235                 240

Phe Gly Val Thr Asp Asn Pro Arg Glu Leu Gln Val Lys Tyr Leu Thr
                245                 250                 255

Thr Tyr Gln Lys Asp Glu Glu Lys Leu Ser Ala Tyr Val Leu Arg Leu
            260                 265                 270

Glu Pro Leu Leu Gln Lys Leu Val Gln Arg Gly Ala Ile Glu Arg Asp
        275                 280                 285

Ala Val Asn Gln Ala Arg Leu Asp Gln Val Ile Ala Gly Ala Val His
    290                 295                 300

Lys Thr Ile Arg Arg Glu Leu Asn
305                 310


<210> 74
<211> 312
<212> PRT
<213> Homo sapiens

<400> 74
Met Thr Leu Arg Leu Leu Glu Asp Trp Cys Arg Gly Met Asp Met Asn
  1               5                  10                  15

Pro Arg Lys Ala Leu Leu Ile Ala Gly Ile Ser Gln Ser Cys Ser Val
             20                  25                  30
```

```
Ala Glu Ile Glu Glu Ala Leu Gln Ala Gly Leu Ala Pro Leu Gly Glu
         35                  40                  45

Tyr Arg Leu Leu Gly Arg Met Phe Arg Arg Asp Glu Asn Arg Lys Val
     50                  55                  60

Ala Leu Val Gly Leu Thr Ala Glu Thr Ser His Ala Leu Val Pro Lys
 65                  70                  75                  80

Glu Ile Pro Gly Lys Gly Gly Ile Trp Arg Val Ile Phe Lys Pro Pro
                 85                  90                  95

Asp Pro Asp Asn Thr Phe Leu Ser Arg Leu Asn Glu Phe Leu Ala Gly
            100                 105                 110

Glu Gly Met Thr Val Gly Glu Leu Ser Arg Ala Leu Gly His Glu Asn
        115                 120                 125

Gly Ser Leu Asp Pro Glu Gln Gly Met Ile Pro Glu Met Trp Ala Pro
    130                 135                 140

Met Leu Ala Gln Ala Leu Glu Ala Leu Gln Pro Ala Leu Gln Cys Leu
145                 150                 155                 160

Lys Tyr Lys Lys Leu Arg Val Phe Ser Gly Arg Glu Ser Pro Glu Pro
                165                 170                 175

Gly Glu Glu Glu Phe Gly Arg Trp Met Phe His Thr Thr Gln Met Ile
            180                 185                 190

Lys Ala Trp Gln Val Pro Asp Val Glu Lys Arg Arg Arg Leu Leu Glu
        195                 200                 205

Ser Leu Arg Gly Pro Ala Leu Asp Val Ile Arg Val Leu Lys Ile Asn
    210                 215                 220

Asn Pro Leu Ile Thr Val Asp Glu Cys Leu Gln Ala Leu Glu Glu Val
225                 230                 235                 240

Phe Gly Val Thr Asp Asn Pro Arg Glu Leu Gln Val Lys Tyr Leu Thr
                245                 250                 255

Thr Tyr Gln Lys Asp Glu Glu Lys Leu Ser Ala Tyr Val Leu Arg Leu
            260                 265                 270

Glu Pro Leu Leu Gln Lys Leu Val Gln Arg Gly Ala Ile Glu Arg Asp
        275                 280                 285

Ala Val Asn Gln Ala Arg Leu Asp Gln Val Ile Ala Gly Ala Val His
    290                 295                 300

Lys Thr Ile Arg Arg Glu Leu Asn
305                 310
```

<210> 75
<211> 425

<212> PRT
<213> Homo sapiens

<400> 75
Gly Arg Arg Gly Cys Ala Arg His Gly Ala Ala Val Pro Ala Ala Pro
1 5 10 15

Cys Gly Cys Cys Glu Arg Leu Val Leu Asn Val Ala Gly Leu Arg Phe
20 25 30

Glu Thr Arg Ala Arg Thr Leu Gly Arg Phe Pro Asp Thr Leu Leu Gly
35 40 45

Asp Pro Ala Arg Arg Gly Arg Phe Tyr Asp Asp Ala Arg Arg Glu Tyr
50 55 60

Phe Phe Asp Arg His Arg Pro Ser Phe Asp Ala Val Leu Tyr Tyr Tyr
65 70 75 80

Gln Ser Gly Gly Arg Leu Arg Arg Pro Ala His Val Pro Leu Asp Val
85 90 95

Phe Leu Glu Glu Val Ala Phe Tyr Gly Leu Gly Ala Ala Ala Leu Ala
100 105 110

Arg Leu Arg Glu Asp Glu Gly Cys Pro Val Pro Pro Glu Arg Pro Leu
115 120 125

Pro Arg Arg Ala Phe Ala Arg Gln Leu Trp Leu Leu Phe Glu Phe Pro
130 135 140

Glu Ser Ser Gln Ala Ala Arg Val Leu Ala Val Val Ser Val Leu Val
145 150 155 160

Ile Leu Val Ser Ile Val Val Phe Cys Leu Glu Thr Leu Pro Asp Phe
165 170 175

Arg Asp Asp Arg Asp Gly Thr Gly Leu Ala Ala Ala Ala Ala Ala Gly
180 185 190

Pro Val Phe Pro Ala Pro Leu Asn Gly Ser Ser Gln Met Pro Gly Asn
195 200 205

Pro Pro Arg Leu Pro Phe Asn Asp Pro Phe Phe Val Val Glu Thr Leu
210 215 220

Cys Ile Cys Trp Phe Ser Phe Glu Leu Leu Val Arg Leu Leu Val Cys
225 230 235 240

Pro Ser Lys Ala Ile Phe Phe Lys Asn Val Met Asn Leu Ile Asp Phe
245 250 255

Val Ala Ile Leu Pro Tyr Phe Val Ala Leu Gly Thr Glu Leu Ala Arg
260 265 270

Gln Arg Gly Val Gly Gln Gln Ala Met Ser Leu Ala Ile Leu Arg Val
275 280 285

```
Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser
    290                 295                 300

Lys Gly Leu Gln Ile Leu Gly Gln Thr Leu Arg Ala Ser Met Arg Glu
305                 310                 315                 320

Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Val Leu Phe Ser
                325                 330                 335

Ser Ala Val Tyr Phe Ala Glu Val Asp Arg Val Asp Ser His Phe Thr
            340                 345                 350

Ser Ile Pro Glu Ser Phe Trp Trp Ala Val Val Thr Met Thr Thr Val
        355                 360                 365

Gly Tyr Gly Asp Met Ala Pro Val Thr Val Gly Gly Lys Ile Val Gly
    370                 375                 380

Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile Ser Leu Pro Val Pro
385                 390                 395                 400

Val Ile Val Ser Asn Phe Ser Tyr Phe Tyr His Arg Glu Thr Glu Gly
                405                 410                 415

Glu Glu Ala Gly Met Phe Ser His Val
            420                 425
```